EIC SEARCH RESULTS

Serial No. 10/813,980 – Method for treatment of tissue

ASRC Searcher: Ethel Leslie
Date: June 8 & 9, 2006

Inventor Search – Foreign & International Patents

Search Strategy

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Set     Items   Description
S1         31   AU=(KNOWLTON E? OR KNOWLTON, E?)
S2         22   S1 AND (ENERGY OR ENERGIES OR RADIOFREQUENC? OR RADIO()FRE-
              QUENC? OR ULTRA()(SOUND? OR SONIC?) OR ULTRASOUND? OR ULTRASO-
              NIC? OR HEAT OR LASER?) AND (RESHAP? OR SHAPE? ? OR SHAPING OR
               RECONTOUR? OR CONTOUR??? OR CONVEX? OR TIGHTEN?)
S3         22   IDPAT (sorted in duplicate/non-duplicate order)
S4         22   IDPAT (primary/non-duplicate records only)

File 347:JAPIO Dec 1976-2005/Dec(Updated 060404)
         (c) 2006 JPO & JAPIO
File 350:Derwent WPIX 1963-2006/UD,UM &UP=200636
         (c) 2006 The Thomson Corp.
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Search Results

4/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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016707110 **Image available**
WPI Acc No: 2005-031386/200503
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332
XRPX Acc No: N05-027082
Tissue site treatment method for dermal remodeling, involves cooling tissue area beneath skin surface to create reverse thermal gradient in **which temperature of skin surface is less than that in tissue area**
Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W** ; LEVINSON M; POPE K
Number of Countries: 108 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 2004105861	A2	20041209	WO 2004US16593	A	20040525	200503	B

Abstract (Basic): WO 2004105861 A2
NOVELTY - The tissue area beneath a skin surface coupled with

energy delivery surface of an electromagnetic **energy** delivery device, is cooled and a reverse thermal gradient in which temperature of skin surface is less than that in the tissue area, is created. The tissue area is modified and irregularities of the skin surface are decreased, by delivering electromagnetic **energy**.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) method of treating acne scars;
(2) method of treating scars;
(3) method of reducing activity of sebaceous glands;
(4) method of reducing size of sebaceous gland;
(5) method of reducing bacteria activity that create acne;
(6) method of reducing size of skin pores;
(7) method of unclogging clogged skin pores;
(8) method of treating acne;
(9) method of treating hyperhydrosis;
(10) method of removing hair; and
(11) method of inducing growth of air.

USE - For skin remodeling/resurfacing and **tightening** , wrinkle removal, elastosis reduction, contraction of collagen, acne scar reduction (claimed), sebaceous glands removal/size reduction/deactivation (claimed), reducing activity and size of subcutaneous glands, reduction (claimed) of activity of sebaceous gland, hair follicle removal, adipose tissue remodeling/removal, spider vein removal, modification of **contour** irregularities of skin surface, creation of scar or nascent collagen, reduction (claimed) of bacteria activity of skin, reduction (claimed) of skin pore size, unclogging (claimed) skin pores, modification of skin, skin appendages e.g. sweat glands, sebaceous glands and hair follicles and subcutaneous tissue structures e.g. fat and muscle tissues, wound healing, reducing/inducing growth of hair and treating hyperhydrosis.

ADVANTAGE - Provides uniform thermal effect in tissue while preventing thermal damage to skin surface and other non-target tissues. Hence adverse effects and healing time are reduced.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the RF electrode assembly.

hand portion housing (12)
RF electrode (20)
activation button (46)
shroud (50)
RF device (52)
pp; 46 DwgNo 4/6

4/5/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

016607598 **Image available**
WPI Acc No: 2004-766332/200475
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2005-031386
XRPX Acc No: N04-604627

Cosmetic tissue effect creating method for skin treatment, involves

performing different levels of cooling to skin surface by generating reverse thermal gradient through skin surface

Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W** ; LEVINSON M; WEBER B
Number of Countries: 108 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200489460	A2	20041021	WO 2004US10132	A	20040331	200475	B

Abstract (Basic): WO 200489460 A2

NOVELTY - Different levels of cooling are performed to the skin surface, by generating a reverse thermal gradient through the skin surface, so that the temperature of the skin surface is lower than the temperature of an underlying tissue. The **radio frequency** (RF) **energy** applied to the skin surface, is set not exceeding 600 joules/cm2 during a single treatment session.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for cosmetic method for inducing formation of scar collagen in collagen containing tissue site beneath a skin surface during a skin treatment.

USE - For skin treatment such as dermal remodeling, dermal **tightening** , wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal or deactivation, reduction of sebaceous gland activity, hair follicle modification, adipose tissue remodeling or removal, spider vein removal, modification of skin irregularities, creation of scar or nascent collagen, reduction of skin bacteria activity, modification of skin pore size, unclogging of skin pores and modification of fat tissue, muscle tissue and facial tissue.

ADVANTAGE - Achieves uniform thermal effect across large tissue area, controls depth of thermal effect to target selected tissue. Prevents unwanted thermal damage to both target and non-target tissues, and reduces adverse tissue effects such as burns and blistering by generating reverse thermal gradient.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)
housing (14)
valve (16)
RF electrode (20)
cryogenic spray delivery unit (22)
force sensor (44)
pp; 43 DwgNo 1A/13

4/5/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

016607597 **Image available**
WPI Acc No: 2004-766331/200475
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766332; 2005-031386
XRPX Acc No: N04-604626

Skin surface cooling apparatus for skin treatment, has memory storing information required for operating radio frequency **electrode,**

cryogenic spray delivery unit and energy **source**
Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W** ; LEVINSON M; WEBER B
Number of Countries: 108 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200489459	A2	20041021	WO 2004US10129	A	20040331	200475	B
US 7006874	B2	20060228	US 96583815	A	19960105	200616	
			US 97827237	A	19970328		
			US 97914681	A	19970819		
			US 97942274	A	19970930		
			US 99337015	A	19990630		
			US 2000522275	A	20000309		
			US 200126870	A	20011220		
			US 200272475	A	20020206		
			US 200272610	A	20020206		
			US 2003400187	A	20030325		
			US 2003404250	A	20030331		

Abstract (Basic): WO 200489459 A2

NOVELTY - A cooling apparatus has a cryogenic spray delivery unit (22) connected to a **radio frequency** (RF) electrode (20) and configured to generate a reverse thermal gradient through a skin surface. A memory positioned at the RF electrode, stores information required for operating the cryogenic spray delivery unit, RF electrode and RF **energy** source.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for apparatus for treating tissue.

USE - For skin treatment such as dermal remodeling and **tightening**, wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal/deactivation, reduction of activity of sebaceous gland, hair follicle removal, adipose tissue remodeling/removal, spider vein removal, modification of **contour** irregularities of skin surface, creation of scar or nascent collagen, reduction of bacteria activity of skin, reduction of skin pore size and unclogging of skin pores.

ADVANTAGE - Achieves uniform thermal effect across large tissue area. Controls depth of thermal effect to target selected tissue. Prevents unwanted thermal damage to both target and non-target tissue and reduces adverse tissue effects such as burns and blistering by generating reverse thermal gradient and controlling operation of RF electrode, cryogenic spray delivery unit and RF source based on stored information.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)
housing (14)
valve (16)
electrode assembly (18)
RF electrode (20)
cryogenic spray delivery unit (22)
force sensor (44)
microprocessor (58)
pp; 47 DwgNo 1A/13

4/5/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016599409 **Image available**
WPI Acc No: 2004-758145/200474
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N04-598721

Skin surface cooling apparatus for skin treatment, has memory storing information required for operating radio frequency **electrode, cryogenic spray delivery unit and** energy **source**

Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W** ; LEVINSON M; STERN R A; WEBER B; STERN R

Number of Countries: 109 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200490939	A2	20041021	WO 2004US9794	A	20040331	200474	B
AU 2003302939	A1	20041021	AU 2003302939	A	20040331	200525	
BR 200403032	A	20050628	BR 20043032	A	20040331	200545	
			WO 2004US9794	A	20040331		
EP 1558164	A2	20050803	EP 2004737226	A	20040331	200551	
			WO 2004US9794	A	20040331		
CN 1697631	A	20051116	CN 200436	A	20040331	200622	

Abstract (Basic): WO 200490939 A2

NOVELTY - The cooling apparatus has a cryogenic spray delivery unit (22) coupled to a **radio frequency** (RF) device which has an RF electrode (20) and coupled with an RF **energy** source. A memory stores information required for operating the RF electrode, cryogenic spray delivery unit and the RF **energy** source.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) apparatus for treating a tissue; and

(2) apparatus for treating a skin.

USE - For skin treatment such as dermal remodeling and **tightening**, wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal/deactivation, reduction of activity of sebaceous gland, hair follicle removal, adipose tissue remodeling/removal, spider vein removal, modification of **contour** irregularities of skin surface, creation of scar or nascent collagen, reduction of bacteria activity of skin, reduction of skin pore size and unclogging of skin pores.

ADVANTAGE - Achieves uniform thermal effect across large tissue area, controls depth of thermal effect to target selected tissue, prevents unwanted thermal damage to both target and non-target tissue and reduces adverse tissue effects such as burns and blistering by controlling operation of RF electrode, cryogenic spray delivery unit and RF **energy** source based on information stored in memory.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)
housing (14)
valve (16)
electrode assembly (18)
RF electrode (20)
cryogenic spray delivery unit (22)

force sensor (44)
spring (48)
microprocessor (58)
pp; 56 DwgNo 1A/13

4/5/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

016599051 **Image available**
WPI Acc No: 2004-757787/200474
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N04-598515

Radio frequency **device for skin treatment, has memory storing information required for operating** radio frequency **electrode, cryogenic spray delivery unit and** energy **source**

Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W** ; LEVINSON M; STERN R; WEBER B
Number of Countries: 108 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200489186	A2	20041021	WO 2004US10140	A	20040331	200474	B

Abstract (Basic): WO 200489186 A2

NOVELTY - A cryogenic spray delivery unit (22) cools the back surface of a **radio frequency** (RF) electrode (20) connected to an RF **energy** source. A memory stores information required for the operation of the RF electrode, cryogenic spray delivery unit and the RF **energy** source.

USE - For skin treatment such as dermal remodeling and **tightening**, wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal/deactivation and reduction of activity of sebaceous gland, hair follicle removal, adipose tissue remodeling/removal, spider vein removal, modification of **contour** irregularities of skin surface, creation of scar or nascent collagen, reduction of bacteria activity of skin, reduction of skin pore size and unclogging of skin pores.

ADVANTAGE - Achieves uniform thermal effect across large tissue area. Controls depth of thermal effect to target selected tissue. Prevents unwanted thermal damage to target and non-target tissue and reduces adverse tissue effects such as burns and blistering by controlling operation of RF electrode, cryogenic spray delivery unit and RF **energy** source based on information stored in memory. Maintains uniform temperature at front surface of RF electrode by cooling RF electrode with cryogenic spray.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)
housing (14)
valve (16)
electrode assembly (18)
RF electrode (20)
cryogenic spray delivery unit (22)

face sensor (44)
spring (48)
pp; 53 DwgNo 1A/13

4/5/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016599050 **Image available**
WPI Acc No: 2004-757786/200474
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N04-598514

Tissue effect creating method for skin treatment e.g. dermal remodeling operation, involves creating reverse thermal gradient, so that skin surface temperature is lower than tissue temperature

Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W** ; LEVINSON M; WEBER B
Number of Countries: 108 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200489185	A2	20041021	WO 2004US10134	A	20040331	200474	B

Abstract (Basic): WO 200489185 A2

NOVELTY - Reverse thermal gradient is created through a skin surface to sufficiently **heat** underlying tissue site, so that temperature of the skin surface is lower than temperature of the underlying tissue. RF electrode (20) or RF source is operated based on the information stored in memory of the RF source coupled with RF electrode delivering electromagnetic **energy** through a skin surface and applied to the underlying tissue.

USE - For skin treatment such as dermal remodeling and **tightening**, wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal or deactivation, reduction of sebaceous gland activity, hair follicle modification, adipose tissue remodeling or removal, spider vein removal, modification of skin irregularities, creation of scar and nascent collagen, reduction of skin bacterial activity, modification of skin pores size, unclogging of skin pores, modification of fat tissue, muscle tissue and facial tissue and cutting and coagulation of tissue.

ADVANTAGE - Achieves uniform thermal effect across large tissue area. Controls depth of thermal effect to target selected tissue and prevents unwanted thermal damage of target and non-target tissue and reduces adverse effects such as burns and blistering by creating tissue effect using reverse thermal gradients and facilitates operation of RF electrode device, RF source and cooling device by using information stored in memory.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)
housing (14)
valve (16)
electrode assembly (18)

RF electrode (20)
fluid delivery unit (22)
force sensor (44)
spring (48)
pp; 57 DwgNo 1A/13

4/5/7 (Item 7 from file: 350) * CURRENT APPLICATION *****

016598138 **Image available**
WPI Acc No: 2004-756872/200474
Related WPI Acc No: 2004-728140
XRAM Acc No: C04-265464
XRPX Acc No: N04-597724

Treatment of a target tissue site, e.g. face lift, comprises delivering energy to the tissue site at a first depth and then at a second depth to achieve respective tissue effects and remodeling tissue at the tissue site

Patent Assignee: KNOWLTON E W (KNOW-I)
Inventor: **KNOWLTON E W**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040210214	A1	20041021	US 2003459219	P	20030331	200474 B
			US 2003533340	P	20031229	
			US 2004813980	A	20040331	
			US 2004828703	A	20040421	

Abstract (Basic): US 20040210214 A1

NOVELTY - Treating a target tissue site by:

(a) selecting the site based on a tissue profile or condition of the site;

(b) delivering **energy** to the tissue site at a depth to achieve a tissue effect using an **energy** delivery device;

(c) delivering **energy** to the tissue site at a second depth to achieve a second tissue effect using an **energy** delivery device (18); and

(d) remodeling a portion of tissue (9) at the tissue site

DETAILED DESCRIPTION - Treating a target tissue site comprises:

(a) selecting the tissue site based on a tissue profile or condition of the tissue site;

(b) delivering **energy** to the tissue site at a first depth to achieve a first tissue effect using an **energy** delivery device;

(c) delivering **energy** to the tissue site at a second depth to achieve a second tissue effect using an **energy** delivery device (18); and

(d) remodeling at least a portion of tissue (9) at the tissue site.

USE - For treating a target tissue site, preferably for use in tissue remodeling procedures, e.g. face lift, eyebrow lift, liposuction of face, thighs, buttocks and stomach.

ADVANTAGE - The invention allows for an improved aesthetic outcome in tissue remodeling procedures by producing uniform amounts of skin

tightening and/or controlled release or severing of the fibrous septae.

DESCRIPTION OF DRAWING(S) - The figure shows a lateral view of a skin treatment apparatus including a feedback control system.

Treatment apparatus (8)
Underlying tissue (9)
Surface tissue layer (9')
Tissue (9)
Introducer (10)
Template (12)
Lumen (13')
Soft tissue mechanical force application surface (14)
Receiving opening (16)
Energy delivery device (18)
Energy delivery surface (20)
Feedback control system (54)
pp; 84 DwgNo 1/48

4/5/8 (Item 8 from file: 350) * CURRENT APPLICATION *****

DIALOG(R)File 350:Derwent WPIX

016569403 **Image available**
WPI Acc No: 2004-728140/200471
Related WPI Acc No: 2004-756872
XRPX Acc No: N04-576681

Energetic treatment method for target tissue site, by delivering energy and vectored mechanical forces to tissue site, producing thermal adhesion or lesion at the site, and remodeling portion of the tissue at the site

Patent Assignee: KNOWLTON E W (KNOW-I)
Inventor: **KNOWLTON E W**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040206365	A1	20041021	US 2003459219	P	20030331	200471 B
			US 2003533340	P	20031229	
			US 2004813980	A	20040331	

Abstract (Basic): US 20040206365 A1

NOVELTY - **Energy** is delivered to a tissue site (91) using an **energy** delivery device, after which vectored mechanical forces (120,130) are delivered to the site. A thermal adhesion (87) or lesion is then produced at the site, after which a portion of the tissue at the site is remodeled.

USE - For target tissue site.

ADVANTAGE - Ensures proper treatment of skin tissue by utilizing patient feedback to control the delivery of **energy** in such treatment. Improves aesthetic outcome in tissue remodeling procedures such as face lifts, eyebrow lifts and liposuction of the face, thighs, buttocks and stomach by producing substantially uniform amounts of skin **tightening** and/or controlled release or severing of the fibrous septae.

DESCRIPTION OF DRAWING(S) - The figure shows the lateral view illustrating an embodiment using the application of **energy** and vectored force to produce the thermal adhesions to produce a desired tissue configuration or aesthetic effect.

Tissue layers (9',9")
Thermal adhesion (87)
Tissue site (91)
Probe (112)
Vectored mechanical forces (120,130)
pp; 84 DwgNo 36/48

4/5/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016145954 **Image available**
WPI Acc No: 2004-303830/200428
XRPX Acc No: N04-241915
Tissue dissection apparatus for use in e.g. plastic surgery, has energy **delivery device coupled to housing and** energy **source, which has geometry that substantially defines plane of dissection**
Patent Assignee: KNOWLTON E W (KNOW-I)
Inventor: **KNOWLTON E W**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040049251	A1	20040311	US 2002396038	P	20020714	200428 B
			US 2002416206	P	20021003	
			US 2002418089	P	20021013	
			US 2003620311	A	20030714	

Abstract (Basic): US 20040049251 A1
NOVELTY - The housing thermally shields a portion of tissue flap. A roller coupled to the housing, is configured to smoothly advance the housing over the tissue. An **energy** delivery device coupled to the housing and **energy** source, has a geometry that substantially defines a plane of dissection.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) electro-surgical apparatus; and
(2) method of creating tissue effect.
USE - For use in various surgical procedures such as plastic surgery procedure and minimally invasive surgical procedure, cutting, dissection, coagulation, surgical dissection procedures producing one or more tissue flaps having substantially uniform thickness.
ADVANTAGE - Enables reducing electrosurgical complications of flap dissection, incidence of full thickness flap laceration, incidence of deep tissue injuries of the subjacent vital structures such as nerves, vessels and muscles either from transaction or thermal conductive damage, incidence of flap necrosis due to interruption of flap blood supply, and electrosurgical burns of the flap. Enhances uniform plane of flap dissection, reduced surface area in a plane of dissection due to flap uniformity, uniform plane of wound healing with a reduction on volumetric scarring within the plane of dissection, uniform thermal **tightening** of the dissected skin flap, uniform primary and secondary **tightening** , reduction in iatrogenic surface **contour** irregularities of the flap surface, and uniform release of subjacent soft tissue structures. Ensures three-dimensional **contour** enhancement from flap advancement, two-dimensional surface area **tightening** from primary and

secondary thermal **tightening** of the skin flap, creation of surgical portal for suction curettment of liposuction treatment site that can provide a more uniform **contour** reduction than standard liposuction. Provides a surgical portal for lifting plication of the subjacent soft tissue and creates a uniform release of pre-existing tethering fibrous septae which causes cellulite dimpling of the skin surface.

DESCRIPTION OF DRAWING(S) - The figure shows the top view of the apparatus for dissecting tissue.

pp; 79 DwgNo 2C/74

4/5/10 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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015713729 **Image available**
WPI Acc No: 2003-775929/200373
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N03-621587

Collagen matrix remodeling apparatus used for plastic surgery, delivers radio frequency energy through semi-solid template, to selected collagen-containing tissue site

Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6438424	B1	20020820	US 95435882	A	19950505	200373 B
			US 96583815	A	19960105	
			US 9623377	P	19960806	
			US 97827237	A	19970328	
			US 983180	A	19980105	

Abstract (Basic): US 6438424 B1

NOVELTY - A delivery device delivers the **radio frequency energy** through a semi-solid template, to a selected collagen-containing tissue site, by contacting the epidermis skin surface of the tissue side site with the tissue contacting surface of template.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for method of treating skin surface.

USE - For remodeling collagen matrix in collagen containing tissue site, during plastic surgery.

ADVANTAGE - The skin is **tightened** with controlled remodeling of collages, without major surgical intervention.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic view of the semi-solid template.

handle (11)
mechanical force application surface (14)
pp; 30 DwgNo 17/22

4/5/11 (Item 11 from file: 350)

DIALOG(R)File 350:Derwent WPIX

015470968 **Image available**
WPI Acc No: 2003-533114/200350
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N03-422899

Tissue treatment apparatus has RF electrode assembly with evaporative cooling

Patent Assignee: THERMAGE INC (THER-N); KNOWLTON E W (KNOW-I)
Inventor: **KNOWLTON E W**

Number of Countries: 103 Number of Patents: 009
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200353266	A2	20030703	WO 2002US41315	A	20021219	200350	B
AU 2002359840	A1	20030709	AU 2002359840	A	20021219	200428	
US 6749624	B2	20040615	US 96583815	A	19960105	200439	
			US 97827237	A	19970328		
			US 97914681	A	19970819		
			US 97942274	A	19970930		
			US 99337015	A	19990630		
			US 200126870	A	20011220		
EP 1455668	A2	20040915	EP 2002794404	A	20021219	200460	
			WO 2002US41315	A	20021219		
US 20040186535	A1	20040923	US 200126870	A	20011220	200463	
			US 2004783974	A	20040220		
BR 200215339	A	20041116	BR 200215339	A	20021219	200501	
			WO 2002US41315	A	20021219		
KR 2004085141	A	20041007	KR 2004709780	A	20040619	200512	
JP 2005512671	W	20050512	WO 2002US41315	A	20021219	200532	
			JP 2003554027	A	20021219		
CN 1617689	A	20050518	CN 2002827778	A	20021219	200558	

Abstract (Basic): WO 200353266 A2

NOVELTY - Apparatus comprises an RF electrode assembly (18) with a temperature sensor coupled to a handpiece, and an RF electrode cooling member (pressurized fluid reservoir) in the handpiece for evaporative cooling of the tissue near the tissue interface (21) surface. The electrode assembly and cooling member have a feedback control.

USE - Apparatus is for correcting a deformity or aesthetically enhancing soft tissue in plastic surgery.

ADVANTAGE - Apparatus enables skin **tightening** without major surgical intervention or cell necrosis. It enables controlled remodeling of collagen in tandem with subcutaneous fat ablation.

DESCRIPTION OF DRAWING(S) - The figure shows the apparatus

apparatus (8)
tissue (9)
introducer (10)
template (12)
lumen (13)
force application surface (14)
receiving opening (16)
energy delivery device (18)
energy delivery surface (20)

tissue interface (21)
energy source (22)
pp; 58 DwgNo 1/25

4/5/12 (Item 12 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015028886 **Image available**
WPI Acc No: 2003-089403/200308
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N03-070444
Contour **irregularities smoothing apparatus for breast reconstruction, delivers** energy **to tissue site through template having skin contacting surface and mechanical force application surface**
Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6461378	B1	20021008	US 95435822	A	19950505	200308	B
			US 96583815	A	19960105		
			US 9623377	P	19960806		
			US 97825445	A	19970328		

Abstract (Basic): US 6461378 B1
NOVELTY - A template (12) has a skin-contacting surface, conformable to three dimensional **contour** of tissue site beneath skin surface, and a mechanical force application surface (14). Several **energy** supply devices (18) are incorporated into template and deliver **energy** to the tissue site through the template. The reverse thermal gradient unit (23) cools the skin surface during application of **energy** to the tissue site.
USE - **Contour** irregularities smoothing apparatus for reconstruction of breast, arms, waist line, nose, ear, etc.
ADVANTAGE - Delivers mechanical force and electromagnetic **energy** to tissue site to change the **contour** of soft tissue structure in an easy and efficient manner.
DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the template of the **contour** irregularities smoothing apparatus.
Template (12)
Mechanical force application surface (14)
Energy supply device (18)
Reverse thermal gradient unit (23)
pp; 29 DwgNo 1/22

4/5/13 (Item 13 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014996579 **Image available**
WPI Acc No: 2003-057094/200305
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N03-044171
Skin smoothing method for human being, involves delivering energy **through skin surface to tissue site for smoothing** contour **irregularities of skin**
Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6470216	B1	20021022	US 95435822	A	19950505	200305 B
			US 96583815	A	19960105	
			US 9623377	P	19960806	
			US 97825443	A	19970328	

Abstract (Basic): US 6470216 B1
NOVELTY - A conformer coupled with an **energy** delivery device (18), is fixed to the skin surface and is compressed by an external mechanical force to produce converging and diverging vectors that smooth skin surface morphology by contracting and distracting the collagen matrix in the soft tissue structure beneath skin surface. **Energy** such as RF, microwave, **ultrasound** , electrical or thermal **energy** is delivered through the skin surface to the tissue site to smooth skin **contour** irregularities.
USE - For smoothing **contour** irregularities of skin of human being.
ADVANTAGE - Provides an apparatus to **tighten** skin without major surgical intervention.
DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of a template.
Mechanical force application surface (14)
Electromagnetic **energy** delivery device (18)
pp; 29 DwgNo 1/22

4/5/14 (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014876187 **Image available**
WPI Acc No: 2002-696893/200275
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598
XRPX Acc No: N02-549395
Tissue structure remodeling apparatus for soft tissue underlying skin surface, uses electromagnetic energy **delivery device and mechanical** energy

Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6430446	B1	20020806	US 95435822	A	19950505	200275 B
			US 96583815	A	19960105	
			US 9623377	P	19960806	
			US 97827237	A	19970328	

Abstract (Basic): US 6430446 B1

NOVELTY - An electromagnetic **energy** delivery device (18) coupled to a template delivers an electromagnetic **energy** to tissue structure through the skin surface while a mechanical force is applied to the structure. The gradual modification of tissue under the skin surface is enabled due to combined application of controlled electromagnetic **energy** and mechanical force, which changes the **contour** of the soft tissue structure when remodeling the tissue structure.

DETAILED DESCRIPTION - The template (12) is provided with a mechanical force application surface (14) which adopts the desired **shape** of the soft tissue structure of a host and conforms to the skin surface overlying the tissue structure when the mechanical force is applied to the template through the mechanical force application surface.

USE - Applicable for **tightening** skin without major surgical intervention.

ADVANTAGE - Enables **tightening** skin of host without major surgical intervention and with controlled remodeling of collagen. Enables changing **contour** of three-dimensional soft tissue structure through combined application of sufficient mechanical force and electromagnetic **energy** . Improves compliance and flexibility of skin surface due to smooth skin surface.

DESCRIPTION OF DRAWING(S) - The figure shows the cross-sectional view of template of soft tissue structure remodeling apparatus.

Template (12)
Mechanical force application surface (14)
Electromagnetic **energy** delivery device (18)
pp; 30 DwgNo 1/19

4/5/15 (Item 15 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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014761600 **Image available**
WPI Acc No: 2002-582304/200262
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-146948; 2002-112909; 2003-057094; 2003-089403; 2003-533114; 2003-775929; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRAM Acc No: C02-164568
XRPX Acc No: N02-461717

Tissue structure modification apparatus for skin surface, has hydration delivery device to deliver hydration agent to skin surface upon which controlled energy **is delivered by** energy **delivery device**

Patent Assignee: KNOWLTON E W (KNOW-I); THERMAGE INC (THER-N)

Inventor: **KNOWLTON E W**
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020062142	A1	20020523	US 95435822	A	19950505	200262 B
			US 96583815	A	19960105	
			US 9623377	P	19960806	
			US 97825443	A	19970328	
			US 97825445	A	19970328	
			US 97827237	A	19970328	
			US 97942274	A	19970930	
US 6425912	B1	20020730	US 95435822	A	19950505	200262
			US 96583815	A	19960105	
			US 9623377	P	19960806	
			US 97825443	A	19970328	
			US 97825445	A	19970328	
			US 97827237	A	19970328	
			US 97942274	A	19970930	

Abstract (Basic): US 20020062142 A1

NOVELTY - A hydration delivery device coupled to a skin interface surface of a template on the skin surface, delivers a hydration agent to the skin surface. An **energy** delivery device (18) coupled to the template, provides controlled delivery of **energy** to the skin surface.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for skin surface **tightening** method.

USE - For modifying soft tissue structure underlying a skin surface for ablating or altering the function of skin appendages like hair follicles, sebaceous glands, sweat gland for treatment of dermal micro varicosities in a non-invasive manner for treatment of skin wrinkling, for breast reconstruction, for orthopedic applications, for remodeling subcutaneous fat of hips and thighs, for treatment of convolutions of ear cartilage and for conformation of nasal tip.

ADVANTAGE - The **tightening** of skin with the collagen is efficiently performed without need for any major surgical interventions by delivering a hydration agent to skin surface and applying controlled **energy** to the skin surface.

DESCRIPTION OF DRAWING(S) - The figure shows the iontophoretic hydration device.

Energy delivery device (18)

pp; 42 DwgNo 3/31

4/5/16 (Item 16 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014292207 **Image available**
WPI Acc No: 2002-112909/200215
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N02-084046
Skin tightening **apparatus delivers** radio frequency energy **to**

electrolytic solution in porous membrane or collagen containing tissue site

Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W**
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6311090	B1	20011030	US 95435822	A	19950505	200215	B
			US 97958305	A	19971028		
			US 99379555	A	19990823		

Abstract (Basic): US 6311090 B1

NOVELTY - A cooling lumen (24) that receives cooling fluid for providing cooling effect to epidermal layer above a collagen containing tissue layer, is provided inside the porous membrane initiated by electrolytic solution (20). A **radio frequency** (RF) generator (28) provides RF **energy** to electrolytic solution or collagen containing tissue site.

USE - For **tightening** skin surface overlying a collagen containing tissue site in **radio frequency** system.

ADVANTAGE - Skin **tightening** is performed and adipose tissue is removed without surgical intervention and damaging the melanocytes and epithelial cells, by applying **radio frequency energy** to electrolytic solution in porous membrane or collagen containing tissue site.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of skin **tightening** apparatus.

Electrolytic solution (20)
Cooling lumen (24)
RF generator (28)
pp; 13 DwgNo 1/6

4/5/17 (Item 17 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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013662736 **Image available**
WPI Acc No: 2001-146948/200115
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N01-107621

Fluid delivery apparatus for introducing fluid cooled medium to skin template at controlled rate while controlled energy **is delivered to skin surface**

Patent Assignee: THERMAGE INC (THER-N); KNOWLTON E W (KNOW-I)
Inventor: **KNOWLTON E W**
Number of Countries: 095 Number of Patents: 011
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200100269	A1	20010104	WO 2000US18307	A	20000629	200115	B
AU 200057853	A	20010131	AU 200057853	A	20000629	200124	
US 6350276	B1	20020226	US 96583815	A	19960105	200220	

			US 97827237	A	19970328		
			US 97914481	A	19970819		
			US 97942274	A	19970930		
			US 99337015	A	19990630		
EP 1196215	A1	20020417	EP 2000943376	A	20000629	200233	
			WO 2000US18307	A	20000629		
US 20020049483	A1	20020425	US 96583815	A	19960105	200233	
			US 97827237	A	19970328		
			US 97914681	A	19970819		
			US 97942274	A	19970930		
			US 99337015	A	19990630		
			US 200126870	A	20011220		
JP 2003503118	W	20030128	WO 2000US18307	A	20000629	200309	
			JP 2001505976	A	20000629		
AU 770936	B2	20040311	AU 200057853	A	20000629	200454	
AU 2004202563	A1	20040708	AU 2004202563	A	20040610	200470	N
EP 1196215	B1	20050525	EP 2000943376	A	20000629	200539	
			WO 2000US18307	A	20000629		
DE 60020370	E	20050630	DE 20370	A	20000629	200545	
			EP 2000943376	A	20000629		
			WO 2000US18307	A	20000629		
EP 1563798	A2	20050817	EP 2000943376	A	20000629	200554	
			EP 20059070	A	20000629		

Abstract (Basic): WO 200100269 A1

NOVELTY - Tissue (9) can include skin tissue or any other collagen containing tissue and underlying tissue (9'') can include dermal and sub-dermal layers, while modifying apparatus (8) of the tissue may include an introducer (10) coupled to a template (12) with a soft-tissue mechanical force application surface (14) and a body structure receiving opening (16). Lumens (13) may be used for delivery of fluids and gases or can provide channels for cables, catheters, wires or viewing devices and an **energy** source (22) is coupled to an **energy** deliver device (18) and/or **energy** delivery surface (20).

USE - Modifying skin surface and underlying tissue via delivery of **energy** and fluid.

ADVANTAGE - **Tightening** of skin without major surgical intervention by controlled remodeling of collagen.

DESCRIPTION OF DRAWING(S) - The drawing is a perspective view of the apparatus of the invention.

Tissue (9,9'')

Modifying apparatus (8)

Introducer (10)

Lumens (13)

Opening (16)

Energy source (22)

Energy deliver device and surface (18,20)

pp; 65 DwgNo 1/25

4/5/18 (Item 18 from file: 350)

DIALOG(R)File 350:Derwent WPIX

013540092 **Image available**

WPI Acc No: 2001-024298/200103

Related WPI Acc No: 1999-277042; 2001-146948; 2002-112909; 2003-057094;

2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386

XRPX Acc No: N01-019011

Tissue treatment apparatus for skin treatment, has energy delivery device arranged on comfortable curved tissue interface surface of template which is coupled to power source

Patent Assignee: THERMAGE INC (THER-N); LEVINSON M (LEVI-I); STERN R A (STER-I); WEBER B (WEBE-I); KNOWLTON E W (KNOW-I); POPE K (POPE-I)

Inventor: STERN R; LEVINSON M; STERN R A; WEBER B; **KNOWLTON E W** ; POPE K

Number of Countries: 092 Number of Patents: 023

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200053113	A1	20000914	WO 2000US6496	A	20000309	200103 B
AU 200037415	A	20000928	AU 200037415	A	20000309	200105
EP 1158919	A1	20011205	EP 2000916288	A	20000309	200203
			WO 2000US6496	A	20000309	
US 6413255	B1	20020702	US 99123440	P	19990309	200248
			US 2000522275	A	20000309	
US 20020151887	A1	20021017	US 99123440	P	19990309	200270
			US 2000522275	A	20000309	
			US 200272475	A	20020206	
US 20020156471	A1	20021024	US 99123440	P	19990309	200273
			US 2000522275	A	20000309	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2002117990	A	20020405	
JP 2002537939	W	20021112	JP 2000603604	A	20000309	200275
			WO 2000US6496	A	20000309	
US 20030199866	A1	20031023	US 96583815	A	19960105	200370
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
			US 99123440	P	19990309	
			US 99337015	A	19990630	
			US 2000522275	A	20000309	
			US 200126870	A	20011220	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003400187	A	20030325	
US 20030216728	A1	20031120	US 96583815	A	19960105	200377
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
			US 99123440	P	19990309	
			US 99337015	A	19990630	
			US 2000522275	A	20000309	
			US 200126870	A	20011220	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003397976	A	20030325	
US 20030220635	A1	20031127	US 96583815	A	19960105	200378
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
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			US 99337015	A	19990630	

			US 2000522275	A	20000309	
			US 200126870	A	20011220	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003447187	A	20030527	
US 20030212393	A1	20031113	US 96583815	A	19960105	200382
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
			US 99123440	P	19990309	
			US 99337015	A	19990630	
			US 2000522275	A	20000309	
			US 200126870	A	20011220	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003404414	A	20030331	
US 20040000316	A1	20040101	US 96583815	A	19960105	200402
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
			US 99123440	P	19990309	
			US 99337015	A	19990630	
			US 2000522275	A	20000309	
			US 200126870	A	20011220	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003404413	A	20030331	
US 20040002704	A1	20040101	US 96583815	A	19960105	200402
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
			US 99123440	P	19990309	
			US 99337015	A	19990630	
			US 2000522275	A	20000309	
			US 200126870	A	20011220	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003400187	A	20030325	
			US 2003404250	A	20030331	
US 20040002705	A1	20040101	US 96583815	A	19960105	200402
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
			US 99123440	P	19990309	
			US 99337015	A	19990630	
			US 2000522275	A	20000309	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003400187	A	20030325	
			US 2003404971	A	20030331	
US 20040030332	A1	20040212	US 96583815	A	19960105	200412
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
			US 99123440	P	19990309	
			US 99337015	A	19990630	
			US 2000522275	A	20000309	

			US 200126870	A	20011220	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003400187	A	20030325	
			US 2003404883	A	20030331	
US 20040034346	A1	20040219	US 96583815	A	19960105	200414
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
			US 99123440	P	19990309	
			US 99337015	A	19990630	
			US 2000522275	A	20000309	
			US 200126870	A	20011220	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003400156	A	20030325	
AU 779100	B2	20050106	AU 200037415	A	20000309	200510
EP 1158919	B1	20050629	EP 2000916288	A	20000309	200543
			WO 2000US6496	A	20000309	
DE 60021063	E	20050804	DE 21063	A	20000309	200552
			EP 2000916288	A	20000309	
			WO 2000US6496	A	20000309	
ES 2240078	T3	20051016	EP 2000916288	A	20000309	200571
US 20060025837	A1	20060202	US 96583815	A	19960105	200610
			US 97827237	A	19970328	
			US 97914681	A	19970819	
			US 97942274	A	19970930	
			US 99123440	P	19990309	
			US 99337015	A	19990630	
			US 2000522275	A	20000309	
			US 200126870	A	20011220	
			US 200272475	A	20020206	
			US 200272610	A	20020206	
			US 2003400187	A	20030325	
			US 2003404414	A	20030331	
			US 2005158286	A	20050620	
US 7022121	B2	20060404	US 99123440	P	19990309	200624
			US 2000522275	A	20000309	
			US 200272475	A	20020206	
DE 60021063	T2	20060511	DE 21063	A	20000309	200635
			EP 2000916288	A	20000309	
			WO 2000US6496	A	20000309	

Abstract (Basic): WO 200053113 A1

NOVELTY - An **energy** delivery device arranged on comfortable curved tissue interface surface of template having variable resistance portion, is coupled to a power source. A sensor is coupled to either the template, **energy** delivery source, tissue interface surface or power source.

DETAILED DESCRIPTION - The variable resistance portion of **energy** delivery device is configured to reduce electrode edge effect, electrode temperature gradient, electrode current density gradient or tissue interface surface temperature gradient. The sensor connected to either template, **energy** delivery source, tissue interface surface or power source, is a thermal sensor, thermocouple, optical sensor, current sensor, voltage sensor, impedance sensor or flow sensor. A fluid source containing one of cooling fluid, gas, cryogenic gas,

liquid, electrolytic solution, cooled liquid or cryogenic liquid, is fluidically coupled to at least one of template, template tissue interface surface, **energy** delivery device, flow controller, control valve or nozzle. A handpiece including at least one of connector, electrical connector, fluid connector, lumen, fluid lumen, cooling fluid lumen, flow controller, control valve or nozzle, is coupled to the template.

USE - For treatment of tissues while performing skin treatments such as dermal remodeling and **tightening** , wrinkle reduction, elastosis reduction, sebaceous gland removal/deactivation, hair follicle removal, adipose tissue remodeling/removal and spider vein removal or when performing combinations of these treatments.

ADVANTAGE - The use of conductive fluids minimizes tissue contact problems, when conductive electrode is used. The reproducibility is improved, since the conductive fluids with differing electrolyte concentrations have different conductivities to cause conduction of appropriate amount of current to the tissue for varying amounts of heating. The solenoid valve alone or in combination with a chopper wheel is employed to deliver the cryogen in very short bursts, thereby allowing the physician to titrate and/or selectively control the amount of **heat** removed by the cryogen from the tissue. The use of conformance **energy** delivery device offers benefits of enhanced clinical outcomes including greater effectiveness to correct superficial and deep wrinkling of facial skin. Duration and pain during the healing period are significantly reduced, as the level of resurfacing is more superficial. The **energy** delivery device can be safely applied to ares outside the face, because the depth of dermal ablation is minimized without loss of clinical effectiveness. Instead of operating room, patients can be treated in office setting without the occupational risks of **laser** .

DESCRIPTION OF DRAWING(S) - The figure shows the schematic view illustrating the flow of current through the tissue in dielectric coated bipolar electrode arrangement.

pp; 84 DwgNo 12/23

4/5/19 (Item 19 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

012470934 **Image available**
WPI Acc No: 1999-277042/199923
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRAM Acc No: C99-081306
XRPX Acc No: N99-207705

Apparatus for modifying skin surface or soft tissue

Patent Assignee: THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W**
Number of Countries: 082 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9916502	A1	19990408	WO 98US16700	A	19980811	199923	B

AU 9889037 A 19990423 AU 9889037 A 19980811 199935

Abstract (Basic): WO 9916502 A1

NOVELTY - The apparatus has a template (12) with a skin interface surface (14). It is connected to a device (11) which delivers a hydrating agent to the skin. An **energy** delivery device (18) is coupled to the template to provide a controlled delivery of **energy** to the skin surface.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a method for **tightening** the surface of the skin using the above apparatus;

(2) a reverse thermal gradient is created through the skin surface to **heat** an underlying collagen containing tissue. The temperature of the skin surface is lower than that of the collagen containing tissue; and

(3) a reverse impedance gradient is created through the surface of the skin to **heat** the underlying collagen containing tissue. An ECF of a post-hydrated surface of the skin is higher that than that of a pre-hydrated state.

USE - The apparatus may be used for breast reconstruction after mastectomy, for **tightening** the skin, e.g. after dieting or to remove wrinkles, to treat pre-term cervical dilation, to speed up orthodontic correction, for orthopedic applications, restoration of hair growth and for treatment of hair follicles, sebaceous glands and dermal and subdermal capillaries for microvaricosity.

ADVANTAGE - Skin **tightening** is achieved without major surgical intervention. Use of the apparatus minimizes cell necrosis.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of a template.

hydration device (11)
template (12)
skin interface surface (14)
energy delivery devices (18)
pp; 84 DwgNo 1/31

4/5/20 (Item 20 from file: 350)

DIALOG(R)File 350:Derwent WPIX

011728461 **Image available**
WPI Acc No: 1998-145371/199813
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1999-277042; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-775929; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N98-115007

Skin tightening and tissue contracting method for cosmetic surgery - involves use of RF energy to deliver alternating current through skin to modify impedance of underlying tissue and contract collagen in tissue

Patent Assignee: KNOWLTON E W (KNOW-I)
Inventor: **KNOWLTON E W**
Number of Countries: 077 Number of Patents: 002
Patent Family:
Patent No Kind Date Applicat No Kind Date Week

WO 9805380	A1	19980212	WO 97US13608	A	19970804	199813	B
AU 9738250	A	19980225	AU 9738250	A	19970804	199829	

Abstract (Basic): WO 9805380 A

The method involves using an electromagnetic **energy** delivery device (10), with an **energy** delivery surface (12). At least part of this surface is placed against the skin of a patient. **Energy** , e.g. from a **radio frequency** (RF) generator (28), is then delivered through the epidermis to the collagen-containing tissue under the skin.

Using this RF **energy** , a high-frequency alternating current flows from a series of electrodes (26) into the tissue, and produces ionic agitation, which frictionally heats the tissue and creates an inflammatory oedema that raises the extracellular fluid level and the tissue conductance. Subsequently there is an increase in intermolecular and inter-fibre cross linkage and a gradual increase in tissue impedance. Thus the impedance of the underlying tissue is modified, and controlled contraction of the collagen is achieved resulting in **tightening** of the skin surface.

ADVANTAGE - Promotes thermal conduction rather than ablation of collagen containing tissue. Does not damage the epidermis. Is minimally invasive.

Dwg.1/6

4/5/21 (Item 21 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

011728412 **Image available**
WPI Acc No: 1998-145322/199813
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145371; 1999-277042; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-775929; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N98-114984

Device for skin- tightening **or remodelling soft tissue in plastic surgery - has template configured to body structure to apply mechanical force and delivers** energy **to modify skin surface or underlying soft tissue**

Patent Assignee: KNOWLTON E W (KNOW-I); THERMAGE INC (THER-N)
Inventor: **KNOWLTON E W**
Number of Countries: 077 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9805286	A1	19980212	WO 97US13607	A	19970804	199813	B
AU 9738249	A	19980225	AU 9738249	A	19970804	199829	
US 6430446	B1	20020806	US 95435822	A	19950505	200275	
			US 96583815	A	19960105		
			US 9623377	P	19960806		
			US 97827237	A	19970328		

Abstract (Basic): WO 9805286 A

The device (10) includes a template (12) with an opening (16) to receive a body structure. A mechanical force application surface (14) is formed inside the template is configured to receive the body structure and apply pressure, suction, adhesion, etc. to the soft

tissue in the structure to create an extension or compression of the collagen containing structure.

The device also has an **energy** delivery device (18), which is coupled to the template. The **energy** delivery device is configured to deliver sufficient **energy** to the template to form an **energy** delivery surface (20), and is linked to a source (22) of **energy** .

ADVANTAGE - Combined application of mechanical force and **energy** **tightens** and smooths the skin surface and improves its compliance and flexibility. Major surgical intervention is not required and there is minimal necrosis of the skin or subcutaneous tissue.

Dwg.1/22

4/5/22 (Item 22 from file: 350)

DIALOG(R)File 350:Derwent WPIX

011008909 **Image available**

WPI Acc No: 1996-505859/199650

Related WPI Acc No: 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-775929; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386

XRPX Acc No: N96-426286

Delivery of thermal energy **through skin to collagen containing tissue - has thermal delivery arrangement conforming to skin** contours **plus electrodes fed by thermal** energy **source to transfer** energy **through skin**

Patent Assignee: THERMAGE (THER-N); KNOWLTON E W (KNOW-I); THERMAGE INC (THER-N)

Inventor: **KNOWLTON E W**

Number of Countries: 071 Number of Patents: 018

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9634568	A1	19961107	WO 96US6274	A	19960503	199650	B
AU 9657893	A	19961121	AU 9657893	A	19960503	199711	
US 5660836	A	19970826	US 95435544	A	19950505	199740	
US 5755753	A	19980526	US 95435822	A	19950505	199828	
US 5871524	A	19990216	US 95435544	A	19950505	199914	
			US 97794003	A	19970203		
JP 11504828	W	19990511	JP 96533545	A	19960503	199929	
			WO 96US6274	A	19960503		
US 5919219	A	19990706	US 95435822	A	19950505	199933	
			US 97914681	A	19970819		
US 5948011	A	19990907	US 95435822	A	19950515	199943	
			US 97958305	A	19971028		
EP 957791	A1	19991124	EP 96914574	A	19960503	199954	
			WO 96US6274	A	19960503		
US 6241753	B1	20010605	US 95435822	A	19950505	200133	
			US 96583815	A	19960105		
US 6377854	B1	20020423	US 95435822	A	19950505	200232	
			US 96583815	A	19960105		
			US 97990494	A	19971215		
US 6377855	B1	20020423	US 95435822	A	19950505	200232	
			US 96583815	A	19960105		
			US 983098	A	19980106		

US 6381497	B1	20020430	US 95435822	A	19950505	200235
			US 96583815	A	19960105	
			US 983120	A	19980106	
US 6381498	B1	20020430	US 95435822	A	19950505	200235
			US 96583815	A	19960105	
			US 983423	A	19980106	
US 6387380	B1	20020514	US 95435544	A	19950505	200239
			US 96635202	A	19960417	
US 6405090	B1	20020611	US 95435822	A	19950505	200244
			US 97914681	A	19970819	
			US 99343943	A	19990630	
US 6453202	B1	20020917	US 95435822	A	19950505	200264
			US 97958305	A	19971028	
			US 99379555	A	19990823	
			US 99399455	A	19990917	
EP 1407720	A1	20040414	EP 96914574	A	19960503	200426
			EP 200475012	A	19960503	

Abstract (Basic): WO 9634568 A

An apparatus [10] includes a thermal delivery arrangement including a porous membrane [18] configured to conform to an exterior skin layer surface [12] electromagnetic electrodes [16] are coupled to the thermal delivery arrangement to deliver thermal **energy** through the skin layer to the underlying collagen tissue. A thermal **energy** controller is coupled to the thermal delivery arrangement to provide sufficient thermal **energy** from the electrodes to contract the collagen layer tissue with no deeper than a first degree burn formed on the exterior skin layer surface.

ADVANTAGE - Capable of **tightening** skin without substantially damaging melanocytes and other epithelial cells.

Dwg.1/6

?

Inventor Search – NPL

Search Strategy

```
Set     Items   Description
S1         37   AU=(KNOWLTON E? OR KNOWLTON, E?)
S2          7   S1 AND (ENERGY OR ENERGIES OR RADIOFREQUENC? OR RADIO()FRE-
              QUENC? OR ULTRA()(SOUND? OR SONIC?) OR ULTRASOUND? OR ULTRASO-
              NIC? OR HEAT OR LASER?) AND (RESHAP? OR SHAPE? ? OR SHAPING OR
               RECONTOUR? OR CONTOUR??? OR CONVEX? OR TIGHTEN?)
S3          7   RD  (unique items)

File 155:MEDLINE(R) 1951-2006/Jun 07
         (c) format only 2006 Dialog
File  73:EMBASE 1974-2006/Jun 08
         (c) 2006 Elsevier Science B.V.
File   5:Biosis Previews(R) 1969-2006/Jun W1
         (c) 2006 The Thomson Corporation
File  34:SciSearch(R) Cited Ref Sci 1990-2006/Jun W1
         (c) 2006 Inst for Sci Info
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
```

Search Results

3/5/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
(c) 2006 The Thomson Corporation. All rts. reserv.

0014046142 BIOSIS NO.: 200300004861
Method for smoothing contour **irregularities of skin surface**
AUTHOR: **Knowlton Edward W** (Reprint
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1263 (4): Oct. 22, 2002 2002
MEDIUM: e-file
PATENT NUMBER: US 6470216 PATENT DATE GRANTED: October 22, 2002 20021022
PATENT CLASSIFICATION: 607-101 PATENT ASSIGNEE: Thermage, Inc.
PATENT COUNTRY: USA
ISSN: 0098-1133 _(ISSN print)
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A method to modify a skin surface or a soft tissue structure underlying the skin surface includes a template with a mechanical force application surface and a receiving opening to receive a body structure. The mechanical force application surface is configured to receive the body structure and apply pressure to the soft tissue structure. An **energy** delivery device is coupled to the template. The **energy** delivery device is configured to deliver sufficient **energy** to the template to form a template **energy** delivery surface.

3/5/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0013883740 BIOSIS NO.: 200200477251
Stomach treatment apparatus and method
AUTHOR: **Knowlton Edward W**
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1260 (5): July 30, 2002 2002
MEDIUM: e-file
PATENT NUMBER: US 6427089 PATENT DATE GRANTED: July 30, 2002 20020730
PATENT CLASSIFICATION: 607-101 PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: An apparatus to modify a stomach wall comprises an elongated member including at least one lumen. A deployable member is coupled to the elongated member. The deployable member is configured to be advanceable and removable from the stomach in a non-deployed state and sized to be positioned in the stomach in a deployed state to engage at least portions of the stomach wall. The deployable member is further configured to house a fluidic media and at least portions of the deployable member wall is configured to be cooled by the fluidic media. The deployable member has a contour in the deployed state approximating at least a portion of a stomach. A microwave antenna is movably positioned in the deployable member so as to control a microwave field strength vector in relation to the antenna. The microwave antenna is configured to be coupled to a microwave energy source and deliver microwave energy to a selectable tissue site in the stomach wall while minimizing thermal injury to one of a mucosal or a submucosal layer. A cable member is coupled to the microwave antenna and is configured to be advanceable within the elongated member.

3/5/3 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0013789340 BIOSIS NO.: 200200382851
Method and apparatus for tightening **skin by controlled contraction of collagen tissue**
AUTHOR: **Knowlton Edward W**
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1259 (2): June 11, 2002 2002
MEDIUM: e-file
PATENT NUMBER: US 6405090 PATENT DATE GRANTED: June 11, 2002 20020611
PATENT CLASSIFICATION: 607-102 PATENT ASSIGNEE: Thermage, Inc., Hayward, CA, USA PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A method and apparatus for **tightening** a surface of a skin with an underlying collagen containing tissue applies radiant **energy** through the skin to underlying collagen tissue without substantially modifying melanocytes and other epithelial cells in the epidermis. A porous membrane is adapted to receive an electrolytic solution and become inflated to substantially conform a contacting exterior surface of the membrane to a skin layer. The membrane includes a cooling lumen for receiving cooling fluid. One or more thermal electrodes positioned in the membrane and transfers thermal **energy** to the electrolytic solution. The electrolytic solution and cooling fluid creates a reverse thermal gradient from the skin surface to the underlying collagen tissue. A thermal power source is coupled to the thermal electrodes, and a source of electrolytic solution is coupled to the membrane.

3/5/4 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0013731673 BIOSIS NO.: 200200325184
Method for smoothing contour **irregularity of skin surface by controlled contraction of collagen tissue**
AUTHOR: **Knowlton Edward W**
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1257 (5): Apr. 30, 2002 2002
MEDIUM: e-file
PATENT NUMBER: US 6381497 PATENT DATE GRANTED: April 30, 2002 20020430
PATENT CLASSIFICATION: 607-101 PATENT ASSIGNEE: Thermage, Inc.
PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A method and apparatus applies radiant **energy** through the skin to underlying collagen tissue without substantially modifying melanocytes and other epithelial cells in the epidermis. A membrane is adapted to receive an electrolytic solution and become inflated to substantially conform a contacting exterior surface of the membrane to a skin layer. The membrane includes a cooling lumen for receiving cooling fluid. One or more thermal electrodes positioned in the membrane and transfers thermal **energy** to the electrolytic solution. The electrolytic solution and cooling fluid creates a reverse thermal gradient from the skin surface to the underlying collagen tissue. A thermal power source is coupled to the thermal electrodes, and a source of electrolytic solution is coupled to the membrane.

3/5/5 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0013720915 BIOSIS NO.: 200200314426
Method and apparatus for controlled contraction of collagen tissue
AUTHOR: **Knowlton Edward W**

JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1257 (4): Apr. 23, 2002 2002
MEDIUM: e-file
PATENT NUMBER: US 6377855 PATENT DATE GRANTED: April 23, 2002 20020423
PATENT CLASSIFICATION: 607-101 PATENT ASSIGNEE: Thermage, Inc.
PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A method and apparatus applies radiant **energy** through the skin to underlying collagen tissue without substantially modifying melanocytes and other epithelial cells in the epidermis. A membrane is adapted to receive an electrolytic solution and become inflated to substantially conform a contacting exterior surface of the membrane to a skin layer. The membrane includes a cooling lumen for receiving cooling fluid. One or more thermal electrodes positioned in the membrane and transfers thermal **energy** to the electrolytic solution. The electrolytic solution and cooling fluid creates a reverse thermal gradient from the skin surface to the underlying collagen tissue. A thermal power source is coupled to the thermal electrodes, and a source of electrolytic solution is coupled to the membrane.

3/5/6 (Item 6 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0013720914 BIOSIS NO.: 200200314425
Method for controlled contraction of collagen in fibrous septae in subcutaneous fat layers
AUTHOR: **Knowlton Edward W**
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1257 (4): Apr. 23, 2002 2002
MEDIUM: e-file
PATENT NUMBER: US 6377854 PATENT DATE GRANTED: April 23, 2002 20020423
PATENT CLASSIFICATION: 607-101 PATENT ASSIGNEE: Thermage, Inc.
PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A method and apparatus applies radiant **energy** through the skin to underlying collagen tissue without substantially modifying melanocytes and other epithelial cells in the epidermis. A membrane is adapted to receive an electrolytic solution and become inflated to substantially conform a contacting exterior surface of the membrane to a skin layer. The membrane includes a cooling lumen for receiving cooling fluid. One or more thermal electrodes positioned in the membrane and transfers thermal **energy** to the electrolytic solution. The electrolytic solution and cooling fluid creates a reverse thermal gradient from the skin surface to the underlying collagen tissue. A thermal power source is coupled to the thermal electrodes, and a source of electrolytic solution is coupled to the membrane.

3/5/7 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0013516011 BIOSIS NO.: 200200109522
Method for controlled contraction of collagen tissue
AUTHOR: **Knowlton E W**
AUTHOR ADDRESS: Danville, Calif., USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1210 (4): p3390-3391 May 26, 1998 1998
MEDIUM: print
PATENT NUMBER: US 5755753 PATENT DATE GRANTED: May 26, 1998 19980526
PATENT CLASSIFICATION: 607-98 PATENT ASSIGNEE: THERMAGE, INC.
PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Citation
LANGUAGE: English
DESCRIPTORS:
MAJOR CONCEPTS: Integumentary System--Chemical Coordination and Homeostasis; Methods and Techniques; Radiation Biology; Skeletal System --Movement and Support
MISCELLANEOUS TERMS: ELECTROMAGNETIC **ENERGY** DELIVERY DEVICE; MEDICAL EQUIPMENT; SKIN **TIGHTENING** METHODS
CONCEPT CODES:
18001 Bones, joints, fasciae, connective and adipose tissue - General and methods
18501 Integumentary system - General and methods
01004 Methods - Laboratory methods
06502 Radiation biology - General
?

Foreign & International Patent Search

Search Strategy

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Set     Items   Description
S1    4515128   ENERGY OR ENERGIES OR RADIOFREQUENC? OR RADIO()FREQUENC? OR
               ULTRASOUND? OR ULTRASON? OR ULTRA()(SONIC? OR SOUND?) OR LAS-
               ER? OR ELECTROMAGNET? OR ELECTRO()MAGNET? OR INFRARED? OR THE-
               RMAL? OR HEAT???
S2    2205508   RESHAP? OR RECONTOUR? OR CONVEX? OR SHAPE? ? OR SHAPING? OR
               CONTOUR? OR MODEL???? OR REMODEL? OR REFORM? OR SCULPT? OR R-
               ESCULPT?
S3      77149   TIGHTEN?
S4     211457   SKIN OR DERMIS OR DERMAL OR EPIDERM? OR DERMATOL? OR CUTAN-
               EOUS?
S5     248377   ORGAN? ? OR TISSUE? ?
S6      19144   COLLAGEN?
S7    3604051   PRESSUR? OR PRESS OR PRESSE? ? OR PRESSING? OR FORCE? ? OR
               COMPRESS?
S8    4237276   CONTACT??? OR TOUCH??? OR APPLY? OR APPLIE? OR APPLICATION?
S9     432547   IC=(A61B? OR A61F? OR A61N?)
S10    488455   S1(5N)S7:S8
S11      4232   S2:S3(5N)(S4 OR S6)
S12      3207   S2:S3(5N)S5
S13       289   S10 AND S11:S12
S14       161   S10(S)S11:S12
S15        50   S14 AND S9
S16       183   S10 AND S11
S17       111   S10(S)S11
S18        18   S17 AND S9
S19        32   S15 NOT S18
S20      3919   S2(5N)(S4 OR S6)
S21       172   S10 AND S20
S22       108   S10(S)S20
S23         0   (S22 NOT S18:S19) AND S9
S24     75546   S1(5N)S2
S25       866   S1(5N)S3
S26     32310   (S4 OR S6)(5N)S7:S8
S27       138   S24:S25 AND S26
S28        41   (S27 NOT S18:S19) AND S9
S29     16722   S1(5N)S4:S5
S30        66   S29 AND S11:S12 AND S6
S31        47   (S30 NOT (S18:S19 OR S28)) AND S9
S32        30   S29(S)S11:S12(S)S6
S33        21   S32 NOT (S18:S19 OR S28)
S34       296   S2:S3(5N)S6
S35        11   S34 AND S10
S36         5   S35 NOT (S18:S19 OR S28 OR S33)
S37        48   S34 (S) S1
S38        26   S37 NOT (S18:S19 OR S28 OR S33 OR S36)
S39        68   (S13 OR S31) AND S6
S40        25   (S39 NOT (S18:S19 OR S28 OR S33 OR S36 OR S38)) AND S9

File 347:JAPIO Dec 1976-2005/Dec(Updated 060404)
         (c) 2006 JPO & JAPIO
File 350:Derwent WPIX 1963-2006/UD,UM &UP=200636
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Search Results

18/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

017621430
WPI Acc No: 2006-132686/200614
XRPX Acc No: N06-114866
Missing claims; abstract and indexing based on disclosure. Patent Office notified - Device for applying heat to human body comprises housing, heat source and detachable heat carrier piece having bullet shaped or disc portion with shaft
Patent Assignee: TAING E K (TAIN-I)
Inventor: TAING E K
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
NZ 537190	A	20051223	NZ 537190	A	20041214	200614	B

18/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016475882 **Image available**
WPI Acc No: 2004-633825/200461
Related WPI Acc No: 2002-731520; 2002-750143; 2004-107964; 2005-476514
XRPX Acc No: N04-500997
Laser device for use in low level laser therapy to e.g. reduce edema, has scanning head that receives laser beam and directs laser beam into any location in hemisphere forward of scanning head
Patent Assignee: SHANKS S C (SHAN-I); TUCEK K (TUCE-I)
Inventor: SHANKS S C; TUCEK K
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20040158301	A1	20040812	US 2001273282	P	20010302	200461	B
			US 2001932907	A	20010820		
			US 2004772738	A	20040204		

18/5/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015028886 **Image available**
WPI Acc No: 2003-089403/200308
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786;

2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N03-070444
Contour irregularities smoothing apparatus for breast reconstruction, delivers energy to tissue site through template having skin contacting surface and mechanical force application surface
Patent Assignee: THERMAGE INC (THER-N)
Inventor: KNOWLTON E W
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6461378	B1	20021008	US 95435822	A	19950505	200308	B
			US 96583815	A	19960105		
			US 9623377	P	19960806		
			US 97825445	A	19970328		

Priority Applications (No Type Date): US 9623377 P 19960806; US 95435822 A 19950505; US 96583815 A 19960105; US 97825445 A 19970328
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6461378	B1		29	A61F-007/00	CIP of application US 95435822
					CIP of application US 96583815
					Provisional application US 9623377
					CIP of patent US 5755753
					CIP of patent US 6241753

Abstract (Basic): US 6461378 B1
NOVELTY - A template (12) has a skin-contacting surface, conformable to three dimensional contour of tissue site beneath skin surface, and a mechanical **force application** surface (14). Several **energy** supply devices (18) are incorporated into template and deliver energy to the tissue site through the template. The reverse thermal gradient unit (23) cools the skin surface during **application** of **energy** to the tissue site.
USE - Contour irregularities smoothing apparatus for reconstruction of breast, arms, waist line, nose, ear, etc.
ADVANTAGE - Delivers mechanical force and electromagnetic energy to tissue site to change the contour of soft tissue structure in an easy and efficient manner.
DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the template of the contour irregularities smoothing apparatus.
Template (12)
Mechanical force application surface (14)
Energy supply device (18)
Reverse thermal gradient unit (23)
pp; 29 DwgNo 1/22

18/5/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014876187 **Image available**
WPI Acc No: 2002-696893/200275
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598

XRPX Acc No: N02-549395

Tissue structure remodeling apparatus for soft tissue underlying skin surface, uses electromagnetic energy delivery device and mechanical energy

Patent Assignee: THERMAGE INC (THER-N)
Inventor: KNOWLTON E W
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6430446	B1	20020806	US 95435822	A	19950505	200275	B
			US 96583815	A	19960105		
			US 9623377	P	19960806		
			US 97827237	A	19970328		

Priority Applications (No Type Date): US 9623377 P 19960806; US 95435822 A 19950505; US 96583815 A 19960105; US 97827237 A 19970328
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6430446	B1		30	A61F-002/00	CIP of application US 95435822
					CIP of application US 96583815
					Provisional application US 9623377
					CIP of patent US 5755753
					CIP of patent US 6241753

Abstract (Basic): US 6430446 B1

NOVELTY - An electromagnetic energy delivery device (18) coupled to a template delivers an electromagnetic energy to tissue structure through the skin surface while a mechanical force is applied to the structure. The gradual modification of tissue under the skin surface is enabled due to combined application of controlled electromagnetic energy and mechanical force, which changes the contour of the soft tissue structure when remodeling the tissue structure.

DETAILED DESCRIPTION - The template (12) is provided with a mechanical force application surface (14) which adopts the desired shape of the soft tissue structure of a host and conforms to the skin surface overlying the tissue structure when the mechanical force is applied to the template through the mechanical force application surface.

USE - Applicable for tightening skin without major surgical intervention.

ADVANTAGE - Enables tightening skin of host without major surgical intervention and with controlled remodeling of collagen. Enables changing contour of three-dimensional soft tissue structure through combined **application** of sufficient mechanical **force** and **electromagnetic energy** . Improves compliance and flexibility of skin surface due to smooth skin surface.

DESCRIPTION OF DRAWING(S) - The figure shows the cross-sectional view of template of soft tissue structure remodeling apparatus.

Template (12)
Mechanical force application surface (14)
Electromagnetic energy delivery device (18)
pp; 30 DwgNo 1/19

18/5/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014761600 **Image available**
WPI Acc No: 2002-582304/200262
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-146948; 2002-112909; 2003-057094; 2003-089403; 2003-533114; 2003-775929; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRAM Acc No: C02-164568
XRPX Acc No: N02-461717

Tissue structure modification apparatus for skin surface, has hydration delivery device to deliver hydration agent to skin surface upon which controlled energy is delivered by energy delivery device

Patent Assignee: KNOWLTON E W (KNOW-I); THERMAGE INC (THER-N)
Inventor: KNOWLTON E W
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020062142	A1	20020523	US 95435822	A	19950505	200262 B
			US 96583815	A	19960105	
			US 9623377	P	19960806	
			US 97825443	A	19970328	
			US 97825445	A	19970328	
			US 97827237	A	19970328	
			US 97942274	A	19970930	
US 6425912	B1	20020730	US 95435822	A	19950505	200262
			US 96583815	A	19960105	
			US 9623377	P	19960806	
			US 97825443	A	19970328	
			US 97825445	A	19970328	
			US 97827237	A	19970328	
			US 97942274	A	19970930	

Priority Applications (No Type Date): US 9623377 P 19960806; US 95435822 A 19950505; US 96583815 A 19960105; US 97825443 A 19970328; US 97825445 A 19970328; US 97827237 A 19970328; US 97942274 A 19970930
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020062142	A1		42	A61B-018/04	CIP of application US 95435822
					CIP of application US 96583815
					Provisional application US 9623377
					CIP of application US 97825443
					CIP of application US 97825445
					CIP of application US 97827237
US 6425912	B1			A61F-002/00	CIP of application US 95435822
					CIP of application US 96583815
					Provisional application US 9623377
					Div ex application US 97825443
					Div ex application US 97825445
					CIP of application US 97827237
					CIP of patent US 5755753
					CIP of patent US 6241753

Abstract (Basic): US 20020062142 A1
NOVELTY - A hydration delivery device coupled to a skin interface surface of a template on the skin surface, delivers a hydration agent

to the skin surface. An energy delivery device (18) coupled to the template, provides controlled delivery of energy to the skin surface.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for skin surface tightening method.

USE - For modifying soft tissue structure underlying a skin surface for ablating or altering the function of skin appendages like hair follicles, sebaceous glands, sweat gland for treatment of dermal micro varicosities in a non-invasive manner for treatment of skin wrinkling, for breast reconstruction, for orthopedic applications, for remodeling subcutaneous fat of hips and thighs, for treatment of convolutions of ear cartilage and for conformation of nasal tip.

ADVANTAGE - The tightening of skin with the collagen is efficiently performed without need for any major surgical interventions by delivering a hydration agent to skin surface and **applying** controlled **energy** to the skin surface.

DESCRIPTION OF DRAWING(S) - The figure shows the iontophoretic hydration device.

Energy delivery device (18)

pp; 42 DwgNo 3/31

18/5/7 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014725356 **Image available**

WPI Acc No: 2002-546060/200258

XRPX Acc No: N02-432187

Energy application method for biological tissue in medical applications, involves delivering intense pulse of electrical energy to targeted site through photoionized path in selected gas environment

Patent Assignee: SHATTUCK J H (SHAT-I); STRUL B (STRU-I)

Inventor: SHATTUCK J H; STRUL B

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6387088	B1	20020514	US 99141674	A	19990630	200258	B
			US 99439737	A	19991115		

Priority Applications (No Type Date): US 99141674 P 19990630; US 99439737 A 19991115

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6387088	B1		26	A61B-018/18	Provisional application US 99141674

Abstract (Basic): US 6387088 B1

NOVELTY - An electromagnetic energy beam from an energy source is irradiated through a selected gas environment to a targeted site. The wavelength of the electromagnetic energy ranges between 10-300 nm and the energy has a selected fluence to photoionize the selected gas in the beam path. An intense pulse of electric energy is applied to the targeted site on biological tissue, through the photoionized path in selected gas environment.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for surface layer removal method.

USE - For applying energy to biological tissue of patient's skin,

for surface layer ablations in **dermatology** , for corneal **shaping** in ophthalmology, for LASIK and PRK refractive procedures, and also for thrombus ablation in cardiology.

ADVANTAGE - Energy delivery interval of longer duration is made with excimer laser ablation. Enables removing the thin surface layers, without collateral thermal damage. Allows precise control of volumetric removal by controlling the repetition rate of the pulsed energy applications. Cost is reduced by using an inexpensive electrical source.

DESCRIPTION OF DRAWING(S) - The figure shows an explanatory drawing of energy application method of biological tissue.

pp; 26 DwgNo 5D/6

18/5/8 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014292207 **Image available**

WPI Acc No: 2002-112909/200215

Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386

XRPX Acc No: N02-084046

Skin tightening apparatus delivers radio frequency energy to electrolytic solution in porous membrane or collagen containing tissue site

Patent Assignee: THERMAGE INC (THER-N)

Inventor: KNOWLTON E W

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6311090	B1	20011030	US 95435822	A	19950505	200215	B
			US 97958305	A	19971028		
			US 99379555	A	19990823		

Priority Applications (No Type Date): US 95435822 A 19950505; US 97958305 A 19971028; US 99379555 A 19990823

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6311090	B1		13	A61B-018/18	Cont of application US 95435822
					Cont of application US 97958305
					Cont of patent US 5755753
					Cont of patent US 5948011

Abstract (Basic): US 6311090 B1

NOVELTY - A cooling lumen (24) that receives cooling fluid for providing cooling effect to epidermal layer above a collagen containing tissue layer, is provided inside the porous membrane initiated by electrolytic solution (20). A radio frequency (RF) generator (28) provides RF energy to electrolytic solution or collagen containing tissue site.

USE - For tightening skin surface overlying a collagen containing tissue site in radio frequency system.

ADVANTAGE - Skin tightening is performed and adipose tissue is

removed without surgical intervention and damaging the melanocytes and epithelial cells, by **applying radio frequency energy** to electrolytic solution in porous membrane or collagen containing tissue site.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of skin tightening apparatus.

Electrolytic solution (20)
Cooling lumen (24)
RF generator (28)
pp; 13 DwgNo 1/6

18/5/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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013983588 **Image available**
WPI Acc No: 2001-467802/200151
XRAM Acc No: C01-141274
XRPX Acc No: N01-347065

Heat-generation sheet for application to skin, comprises heat generating agent containing preset amount of iron powder, activated carbon, vermiculite, sodium chloride and water, provided between two composite film

Patent Assignee: HISAMITSU PHARM CO LTD (HISM); SANBO KAGAKU KK (SANB-N)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 2001095832	A	20010410	JP 99279624	A	19990930	200151	B

18/5/10 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

013385632 **Image available**
WPI Acc No: 2000-557570/200051
Related WPI Acc No: 2000-571312; 2001-265097
XRPX Acc No: N00-412603

Subsurface cutaneous tissue laser treatment for tightening and reducing wrinkles of skin, involves applying laser **beam to skin for period of time sufficient to cause photocoagulation of dermis**

Patent Assignee: LASER SKIN TONER INC (LASE-N)
Inventor: O'DONNELL F E
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6096029	A	20000801	US 9623252	A	19960812	200051	B
			US 97804931	A	19970224		

Priority Applications (No Type Date): US 9623252 P 19960812; US 97804931 A 19970224
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6096029	A		8	A61B-017/36	Provisional application US 9623252

Abstract (Basic): US 6096029 A

NOVELTY - A laser handpiece which contacts a patient's skin is held. A laser beam is applied to the skin for a period of time sufficient to cause photocoagulation of the dermis of the skin while avoiding the damage to the epidermis.

DETAILED DESCRIPTION - A laser beam is focused to a location below the epidermis of a patient's skin to achieve a spot size ranging from 2 to 5 mm in diameter and an energy fluence of not less than 100 joules per square centimeter.

USE - For tightening and reducing wrinkles of skin without altering the epidermis.

ADVANTAGE - Effects significant tightening of skin without damaging the epidermis. Avoids temporary disability of patient, and allows repeated laser treatments to maintain skin tone and surface smoothness.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic drawing of a laser handpiece.

pp; 8 DwgNo 4/4

18/5/13 (Item 13 from file: 350)

DIALOG(R)File 350:Derwent WPIX

012953818 **Image available**
WPI Acc No: 2000-125668/200011
Related WPI Acc No: 2002-112911
XRPX Acc No: N00-094685

Portable facial iron for reducing wrinkles in user's face

Patent Assignee: DANTE INT CONSULTING INC (DANT-N); TRI-ANGELS CO LTD (TRIA-N); TRI-ANGELS LTD (TRIA-N); GEBHARD A (GEBH-I)
Inventor: GEBHARD A
Number of Countries: 087 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6001070	A	19991214	US 98150325	A	19980909	200011	B
			US 99240561	A	19990129		
WO 200013645	A1	20000316	WO 99US19581	A	19990826	200022	
AU 9957877	A	20000327	AU 9957877	A	19990826	200032	
EP 1124525	A1	20010822	EP 99945232	A	19990826	200149	
			WO 99US19581	A	19990826		
CN 1314802	A	20010926	CN 99810231	A	19990826	200206	

Priority Applications (No Type Date): US 99240561 A 19990129; US 98150325 A 19980909
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6001070	A		9	A61B-017/00	CIP of application US 98150325
WO 200013645	A1	E		A61H-001/00	

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

AU 9957877	A		A61H-001/00	Based on patent WO 200013645	
EP 1124525	A1	E	A61H-001/00	Based on patent WO 200013645	

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT

LI LT LU LV MC MK NL PT RO SE SI
CN 1314802 A A61H-001/00

Abstract (Basic): US 6001070 A

NOVELTY - A hand-held iron (200) has spoon-shaped surface which is heated by power source and heater for applying heat to user's **skin** . A thermistor maintains the spoon- **shaped** surface at predetermined temperature. A charger with base for removably holding the iron, charges the power source comprising rechargeable batteries.

DETAILED DESCRIPTION - Several LEDS are provided for indicating the charge and operational status of power source. Ergonomically shaped handle allows the user to more effectively control the manipulation of spoon-shaped surface. A three position switch causing the heater to turn-ON upon removal from charger at first position, turns the heater ON by hand at second position, and turns OFF heater when facial iron is not in charger at third position. An INDEPENDENT CLAIM is also included for method of reducing facial wrinkles.

USE - For reducing wrinkles in user's face by providing controlled, heated massage to user's face.

ADVANTAGE - Enables alleviating or deducing wrinkles on the face of user through application of massage or heat. Separate charger base and rechargeable batteries are provided for enhanced safety and convenience. Has ergonomically shaped handle for improved as of control and leverage.

DESCRIPTION OF DRAWING(S) - The figure shows top perspective view of user massaging her face with iron.

Hand-held iron (200)

pp; 9 DwgNo 1/13

18/5/14 (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX

012470934 **Image available**
WPI Acc No: 1999-277042/199923
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRAM Acc No: C99-081306
XRPX Acc No: N99-207705

Apparatus for modifying skin surface or soft tissue

Patent Assignee: THERMAGE INC (THER-N)
Inventor: KNOWLTON E W
Number of Countries: 082 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9916502	A1	19990408	WO 98US16700	A	19980811	199923	B
AU 9889037	A	19990423	AU 9889037	A	19980811	199935	

Priority Applications (No Type Date): US 97942274 A 19970930
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9916502	A1	E	84	A61N-001/30	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
AU 9889037 A A61N-001/30 Based on patent WO 9916502

Abstract (Basic): WO 9916502 A1

NOVELTY - The apparatus has a template (12) with a skin interface surface (14). It is connected to a device (11) which delivers a hydrating agent to the skin. An energy delivery device (18) is coupled to the template to provide a controlled delivery of energy to the skin surface.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a method for tightening the surface of the skin using the above apparatus;

(2) a reverse thermal gradient is created through the skin surface to heat an underlying collagen containing tissue. The temperature of the skin surface is lower than that of the collagen containing tissue; and

(3) a reverse impedance gradient is created through the surface of the skin to heat the underlying collagen containing tissue. An ECF of a post-hydrated surface of the skin is higher that than that of a pre-hydrated state.

USE - The apparatus may be used for breast reconstruction after mastectomy, for tightening the skin, e.g. after dieting or to remove wrinkles, to treat pre-term cervical dilation, to speed up orthodontic correction, for orthopedic applications, restoration of hair growth and for treatment of hair follicles, sebaceous glands and dermal and subdermal capillaries for microvaricosity.

ADVANTAGE - Skin tightening is achieved without major surgical intervention. Use of the apparatus minimizes cell necrosis.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of a template.

hydration device (11)
template (12)
skin interface surface (14)
energy delivery devices (18)
pp; 84 DwgNo 1/31

18/5/15 (Item 15 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011728412 **Image available**
WPI Acc No: 1998-145322/199813
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145371; 1999-277042; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-775929; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N98-114984

Device for skin-tightening or remodelling soft tissue in plastic surgery - has template configured to body structure to apply **mechanical** force

and delivers energy **to modify skin surface or underlying soft tissue**
Patent Assignee: KNOWLTON E W (KNOW-I); THERMAGE INC (THER-N)
Inventor: KNOWLTON E W
Number of Countries: 077 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9805286	A1	19980212	WO 97US13607	A	19970804	199813	B
AU 9738249	A	19980225	AU 9738249	A	19970804	199829	
US 6430446	B1	20020806	US 95435822	A	19950505	200275	
			US 96583815	A	19960105		
			US 9623377	P	19960806		
			US 97827237	A	19970328		

Priority Applications (No Type Date): US 97827237 A 19970328; US 9623377 P 19960806; US 95435822 A 19950505; US 96583815 A 19960105
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9805286	A1	E	59	A61H-007/00	
AU 9738249	A			A61H-007/00	Based on patent WO 9805286
US 6430446	B1		30	A61F-002/00	CIP of application US 95435822 CIP of application US 96583815 Provisional application US 9623377 CIP of patent US 5755753 CIP of patent US 6241753

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

Abstract (Basic): WO 9805286 A

The device (10) includes a template (12) with an opening (16) to receive a body structure. A mechanical force application surface (14) is formed inside the template is configured to receive the body structure and apply pressure, suction, adhesion, etc. to the soft tissue in the structure to create an extension or compression of the collagen containing structure.

The device also has an energy delivery device (18), which is coupled to the template. The energy delivery device is configured to deliver sufficient energy to the template to form an energy delivery surface (20), and is linked to a source (22) of energy.

ADVANTAGE - Combined application of mechanical force and energy **tightens** and smooths the **skin** surface and improves its compliance and flexibility. Major surgical intervention is not required and there is minimal necrosis of the skin or subcutaneous tissue.

Dwg.1/22

18/5/16 (Item 16 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011235809 **Image available**
WPI Acc No: 1997-213712/199720
XRPX Acc No: N97-176187

Compress for heat therapy treatment - has cushion shaped **pocket held against** skin **in which exchangeable inserts are placed which store heat and which can be of aromatic material**
Patent Assignee: KIRSCHKE J (KIRS-I)
Inventor: KIRSCHKE J
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 19536652	A1	19970410	DE 1036652	A	19950930	199720	B

18/5/17 (Item 17 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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003265624
WPI Acc No: 1982-B4621E/198206
Skin burn modelling unit - has thyristor interrupter and comparison circuit containing temp. sensitive resistor
Patent Assignee: EPIDEMIOLOGY MICROB (EPID-R)
Inventor: BUDARIN A G; CHANTURIA T S K; MOROZ A F
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
SU 827054	B	19810507				198206	B

Priority Applications (No Type Date): SU 2777600 A 19790608
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
SU 827054	B		2		

19/5/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO
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05652155 **Image available**
LASER THERAPY METHOD FOR ORGANISM TISSUE AND TARGET USED THEREFOR

PUB. NO.: 09-266955 [JP 9266955 A]
PUBLISHED: October 14, 1997 (19971014)
INVENTOR(s): DAIKUSONO NORIO
APPLICANT(s): S L T JAPAN KK [000000] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 08-078505 [JP 9678505]
FILED: April 01, 1996 (19960401)
INTL CLASS: [6] **A61N**-005/06 ; **A61B-017/36**
JAPIO CLASS: 28.2 (SANITATION -- Medical)
JAPIO KEYWORD:R002 (LASERS); R012 (OPTICAL FIBERS)

ABSTRACT

PROBLEM TO BE SOLVED: To irradiate a laser beam to the whole surface of organism tissue evenly and efficiently, **applying** a liquid containing a **laser** beam absorptive powder body and its dispersing agent as a target on the surface of organism tissue with a specific thickness in equipment to **reform** the **tissue** by irradiating laser beam to organism tissue.
SOLUTION: When a birthmark ablation is to be performed, a liquid consisting

of laser beam absorptive powder with the diameter not larger than 40.mu.m consisting of a colored substance selected from a group of carbon, manganese dioxide, and iron oxide and its dispersion medium is applied as a target T on the organism tissue surface in the film thickness not larger than 40.mu.m to perform therapy by irradiating a laser beam L from a laser beam generator 18. The laser beam irradiated to the target T is absorbed by the laser beam absorptive powder contained in the target T to be converted to thermal energy. As the result, the whole area irradiated by the laser beam instantly reaches a high temperature to transevaporate the tissue

19/5/5 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

017433656 **Image available**
WPI Acc No: 2005-757335/200577
XRPX Acc No: N05-624927

Patient`s annular organ structure repairing method, involves intimately contacting inner wall of structure by tissue-contactor component, and applying **high frequency** tissue **-shrinkable** energy **to shrink and** tighten **structure**

Patent Assignee: HAUCK W (HAUC-I); TU H (TUHH-I); WITZEL T (WITZ-I)
Inventor: HAUCK W; TU H; WITZEL T
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20050240249	A1	20051027	US 2003515221	P	20031028	200577	B
			US 2004978288	A	20041028		

Priority Applications (No Type Date): US 2003515221 P 20031028; US 2004978288 A 20041028
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20050240249	A1		36	A61F-007/00	Provisional application US 2003515221

Abstract (Basic): US 20050240249 A1

NOVELTY - The method involves intimately contacting a portion of an inner wall of an annular organ structure of e.g. heart valve, by a tissue-contactor component having energy-delivering units. Tissue-shrinkable energy e.g. ultrasound energy, which is a high frequency energy is delivered at the structure via the units. The tissue-shrinkable energy is applied at a distance wirelessly from the units to shrink and tighten the structure.

USE - Used for repairing an annular organ structure of a heart valve, venous valve, valve leaflet, chordae tendinae, papillary muscle and esophageal sphincter, in a patient.

ADVANTAGE - The method applies tissue-shrinkable energy which is the high frequency energy to the structure, thus enhancing the shrinking and **tightening** of the annular **organ** structure, and hence effectively and safely repairs the annular organ structure of the patient.

DESCRIPTION OF DRAWING(S) - The drawing shows a catheter system with a deployed flexible tissue-contactor component and electrode units.

Catheter system (1)
Distal tip section (2)
Flexible tissue-contactor component (35)

High frequency current generator (61)
Electrical conductor unit (62)
pp; 36 DwgNo 1/21

19/5/10 (Item 7 from file: 350) * CURRENT APPLICATION ***
DIALOG(R)File 350:Derwent WPIX
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016598138 **Image available**
WPI Acc No: 2004-756872/200474
Related WPI Acc No: 2004-728140
XRAM Acc No: C04-265464
XRPX Acc No: N04-597724

Treatment of a target tissue site, e.g. face lift, comprises delivering energy to the tissue site at a first depth and then at a second depth to achieve respective tissue effects and remodeling tissue at the tissue site

Patent Assignee: KNOWLTON E W (KNOW-I)
Inventor: KNOWLTON E W
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040210214	A1	20041021	US 2003459219	P	20030331	200474 B
			US 2003533340	P	20031229	
			US 2004813980	A	20040331	
			US 2004828703	A	20040421	

Priority Applications (No Type Date): US 2004828703 A 20040421; US 2003459219 P 20030331; US 2003533340 P 20031229; US 2004813980 A 20040331
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040210214	A1		84	A61B-018/18	Provisional application US 2003459219
					Provisional application US 2003533340
					CIP of application US 2004813980

Abstract (Basic): US 20040210214 A1

NOVELTY - Treating a target tissue site by:

(a) selecting the site based on a tissue profile or condition of the site;

(b) delivering energy to the tissue site at a depth to achieve a tissue effect using an energy delivery device;

(c) delivering energy to the tissue site at a second depth to achieve a second tissue effect using an energy delivery device (18); and

(d) remodeling a portion of tissue (9) at the tissue site.

DETAILED DESCRIPTION - Treating a target tissue site comprises:

(a) selecting the tissue site based on a tissue profile or condition of the tissue site;

(b) delivering energy to the tissue site at a first depth to achieve a first tissue effect using an energy delivery device;

(c) delivering energy to the tissue site at a second depth to achieve a second tissue effect using an energy delivery device (18); and

(d) remodeling at least a portion of tissue (9) at the tissue site.

USE - For treating a target tissue site, preferably for use in tissue remodeling procedures, e.g. face lift, eyebrow lift, liposuction of face, thighs, buttocks and stomach.

ADVANTAGE - The invention allows for an improved aesthetic outcome in tissue remodeling procedures by producing uniform amounts of skin tightening and/or controlled release or severing of the fibrous septae.

DESCRIPTION OF DRAWING(S) - The figure shows a lateral view of a skin treatment apparatus including a feedback control system.

Treatment apparatus (8)
Underlying tissue (9)
Surface tissue layer (9')
Tissue (9)
Introducer (10)
Template (12)
Lumen (13')
Soft tissue mechanical force application surface (14)
Receiving opening (16)
Energy delivery device (18)
Energy delivery surface (20)
Feedback control system (54)
pp; 84 DwgNo 1/48

19/5/11 (Item 8 from file: 350) * CURRENT APPLICATION *****

DIALOG(R)File 350:Derwent WPIX

016569403 **Image available**
WPI Acc No: 2004-728140/200471
Related WPI Acc No: 2004-756872
XRPX Acc No: N04-576681

Energetic treatment method for target tissue site, by delivering energy and vectored mechanical forces to tissue site, producing thermal adhesion or lesion at the site, and remodeling **portion of the** tissue **at the site**

Patent Assignee: KNOWLTON E W (KNOW-I)
Inventor: KNOWLTON E W
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040206365	A1	20041021	US 2003459219	P	20030331	200471 B
			US 2003533340	P	20031229	
			US 2004813980	A	20040331	

Priority Applications (No Type Date): US 2004813980 A 20040331; US 2003459219 P 20030331; US 2003533340 P 20031229
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040206365	A1		84	A61B-018/18	Provisional application US 2003459219
					Provisional application US 2003533340

Abstract (Basic): US 20040206365 A1

NOVELTY - Energy is delivered to a tissue site (91) using an energy delivery device, after which vectored mechanical forces (120,130) are

delivered to the site. A thermal adhesion (87) or lesion is then produced at the site, after which a portion of the tissue at the site is remodeled.

USE - For target tissue site.

ADVANTAGE - Ensures proper treatment of skin tissue by utilizing patient feedback to control the delivery of energy in such treatment. Improves aesthetic outcome in tissue remodeling procedures such as face lifts, eyebrow lifts and liposuction of the face, thighs, buttocks and stomach by producing substantially uniform amounts of skin tightening and/or controlled release or severing of the fibrous septae.

DESCRIPTION OF DRAWING(S) - The figure shows the lateral view illustrating an embodiment using the application of energy and vectored force to produce the thermal adhesions to produce a desired tissue configuration or aesthetic effect.

Tissue layers (9',9")
Thermal adhesion (87)
Tissue site (91)
Probe (112)
Vectored mechanical forces (120,130)
pp; 84 DwgNo 36/48

19/5/13 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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015901156 **Image available**
WPI Acc No: 2004-058996/200406
Related WPI Acc No: 2002-304889; 2002-362562; 2002-394309; 2002-426079; 2002-599175; 2002-706749; 2003-090224; 2003-687468
XRAM Acc No: C04-024065
XRPX Acc No: N04-047739

Expandable device for thermally affecting tissue, has fluid conduit with spiral shaped section having tissue contact region, which is operable to contact **and** thermally **affect tissue to be treated**

Patent Assignee: LARNARD D J (LARN-I); SACHS D (SACH-I)
Inventor: LARNARD D J; SACHS D
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020068902	A1	20020606	US 2000238314	P	20001005	200406 B
			US 2001971016	A	20011004	

Priority Applications (No Type Date): US 2000238314 P 20001005; US 2001971016 A 20011004
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020068902	A1		13	A61F-007/00	Provisional application US 2000238314

Abstract (Basic): US 20020068902 A1

NOVELTY - An expandable device for thermally affecting tissue, has a fluid conduit (100) with an inlet and outlet (104,106) and spiral shaped section. The spiral shaped section defines a tissue contact region, which is operable to **contact** and **thermally** affect a tissue to be treated.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for

use of spiral shaped element to affect thermal energy change in tissue of a patient body.

USE - For thermally affecting tissue surface of a patient.

ADVANTAGE - The device evenly distributes or removes thermal energy from tissue. The device can be used to minimize uterine irritability in a female during the premature delivery. The device advantageously provides a physician with a way to control the temperature of a localized region of brain tissue by infusing a chilled or heated thermally-transmissive fluid, such as saline, into the expandable element and allowing convection to complete the thermally transfer between the localized brain tissue and the expandable element. The device provides a chilled fluid in order to lower the localized brain temperature as a neuroprotective means in a cerebral ischemia condition to cool localized regions of the brain in a brain trauma patient as a way to lower cerebral metabolic requirement and minimize brain edema. The device can also be used in a post-operative trauma situation when the possibility of cerebral edema exists.

DESCRIPTION OF DRAWING(S) - The figure shows perspective view of expandable element.

conduit (100)

fluid inlet and outlet (104,106)

pp; 13 DwgNo 26/26

19/5/17 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014821464 **Image available**

WPI Acc No: 2002-642170/200269

Related WPI Acc No: 2004-346622; 2004-709153

XRPX Acc No: N02-507551

Localized thermally-mediated therapy method for thermoplastic remodeling of tissue, involves vaporizing liquid introduced into chamber to exit through openings to apply energy **to targeted tissue**

Patent Assignee: SHADDUCK J H (SHAD-I)

Inventor: SHADDUCK J H

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020082667	A1	20020627	US 2000254487	P	20001209	200269	B
			US 200117582	A	20011207		
US 6669694	B2	20031230	US 2000230556	P	20000905	200402	
			US 2000254487	P	20001209		
			US 200117582	A	20011207		

Priority Applications (No Type Date): US 2000254487 P 20001209; US 200117582 A 20011207; US 2000230556 P 20000905

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020082667	A1		34	A61F-007/00	Provisional application US 2000254487
US 6669694	B2			A61B-018/18	Provisional application US 2000230556 Provisional application US 2000254487

Abstract (Basic): US 20020082667 A1

NOVELTY - A targeted tissue is engaged with an engagement surface (20A) of an instrument working end (10) and a liquid is introduced into a chamber in the working end. A thermal energy delivery mechanism partly vaporizes the liquid and a pressurizing mechanism causes the partly vaporized media to exit through the openings in the engagement surface to apply energy to the targeted tissue.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) Medical device;

(2) Thermal effect generation method.

USE - For causing hemostasis, to weld tissue and to cause a thermoplastic remodeling of tissue.

ADVANTAGE - The sealing or welding of selected tissue volumes are performed efficiently without desiccation or charring of proximate tissue layers.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of a probe used in thermally mediated therapy.

Instrument working end (10)

Engagement surface (20A)

pp; 34 DwgNo 2A/16

19/5/18 (Item 15 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014541859 **Image available**

WPI Acc No: 2002-362562/200239

Related WPI Acc No: 2002-304889; 2002-394309; 2002-426079; 2002-599175; 2004-226240; 2004-267183

XRAM Acc No: C02-102724

XRPX Acc No: N02-283332

Expandable device for thermal therapy, includes spiral shaped section defining tissue contact region

Patent Assignee: SEACOAST TECHNOLOGIES INC (SEAC-N); LARNARD D J (LARN-I); SACHS D (SACH-I)

Inventor: LARNARD D J; SACHS D

Number of Countries: 023 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200228331	A1	20020411	WO 2001US31221	A	20011004	200239	B
EP 1326564	A1	20030716	EP 2001979508	A	20011004	200347	
			WO 2001US31221	A	20011004		
US 20020068902	A1	20020606	US 2000238314	P	20001005	200415	
			US 2001971016	A	20011004		
US 6899726	B2	20050531	US 2000238314	P	20001005	200536	
			US 2001971016	A	20011004		

Priority Applications (No Type Date): US 2000238314 P 20001005; US 2001971016 A 20011004

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200228331	A1	E	26	A61F-007/12	

Designated States (National): CA JP

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

EP 1326564 A1 E A61F-007/12 Based on patent WO 200228331
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
US 20020068902 A1 13 A61F-007/00 Provisional application US 2000238314

US 6899726 B2 A61F-007/00 Provisional application US 2000238314

Abstract (Basic): WO 200228331 A1

NOVELTY - An expandable device comprises a fluid conduit (100) defining a fluid inlet (104), a fluid outlet (106), and a spiral-shaped section (18) defining a tissue contact region. The tissue contact region is operable to **contact** and **thermally** affect a tissue to be treated.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of using spiral-shaped element to affect a thermal energy change in tissue of a patient's body comprising creating an opening in the patient's body, inserting at least a portion of the spiral-shaped element into the opening and into a region between an outer barrier of the patient's body and the tissue, and infusing a thermally transmissive fluid into the spiral-shaped element.

USE - For thermally affecting tissue, particularly for sub-cranial temperature control of brain tissue.

ADVANTAGE - The invention evenly distributes or removes thermal energy from tissue. It can be inserted through an opening in a patient's body and expanded or deployed to cover a greater surface area.

DESCRIPTION OF DRAWING(S) - The figure is a perspective view of a system, showing a spiral-shaped feature.

Spiral-shaped section (18)
Fluid conduit (100)
Fluid inlet (104)
Fluid outlet (106)
pp; 26 DwgNo 26/26

19/5/23 (Item 20 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013718402 **Image available**
WPI Acc No: 2001-202632/200120
XRPX Acc No: N01-144612

Surface shape measurement for e.g. eye corneal tissue, by applying excitation light energy into eye corneal tissue so that tissue forms fluorescent light energy

Patent Assignee: VISX INC (VISX-N)
Inventor: CAUDLE G; CLAPHAM T N; MUNNERLYN C R; SHIMMICK J K
Number of Countries: 087 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200108547	A2	20010208	WO 2000US20764	A	20000727	200120	B
AU 200067512	A	20010219	AU 200067512	A	20000727	200129	
EP 1210011	A2	20020605	EP 2000955286	A	20000727	200238	
			WO 2000US20764	A	20000727		
JP 2003505177	W	20030212	WO 2000US20764	A	20000727	200321	
			JP 2001513289	A	20000727		

US 6592574	B1	20030715	US 99146231	P	19990728	200348
			US 2000626732	A	20000727	
AU 765519	B	20030918	AU 200067512	A	20000727	200370
MX 2002000876	A1	20021201	WO 2000US20764	A	20000727	200377
			MX 2002876	A	20020124	

Priority Applications (No Type Date): US 99146231 P 19990728; US 2000626732 A 20000727

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200108547	A2	E	46	A61B-000/00	
Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW					
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
AU 200067512	A			A61B-000/00	Based on patent WO 200108547
EP 1210011	A2	E		A61B-006/00	Based on patent WO 200108547
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2003505177	W		54	A61B-003/10	Based on patent WO 200108547
US 6592574	B1			A61B-018/18	Provisional application US 99146231
AU 765519	B			A61B-006/00	Previous Publ. patent AU 200067512 Based on patent WO 200108547
MX 2002000876	A1			A61B-006/00	Based on patent WO 200108547

Abstract (Basic): WO 200108547 A2

NOVELTY - An illumination system (20) projects excitation light energy (18) from a light energy source (16) into the corneal tissue (4) of an eye (2). The eye absorbs the excitation light energy, and produces and emits a fluorescent light energy (14). A detector (26) measures the intensity of the fluorescent light energy. A computer (30) determines the tissue surface shape based on the detector result.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(a) a tissue surface region laser sculpting method;

(b) a tissue surface topography measuring system;

(c) a corneal tissue exposed surface topography measuring system;

(d) an exposed tissue surface laser sculpting system;

(e) a laser sculpting system for an ablated region on an exposed stromal tissue surface;

(f) a tissue hydration measuring system;

(g) a system used in an eye corneal tissue resculpting apparatus;

(h) a tissue hydration measuring method;

(i) a compensation method for use in resculpting an eye corneal tissue;

(j) and an eye corneal tissue sculpting method to attain a desired change in an eye optical property.

USE - For measuring surface shape or topography of e.g. eye corneal tissue, during reshaping of eye corneal tissue by eye surgical procedure e.g. photo refractive keratectomy PRK, photo therapeutic keratectomy PTK, laser-assisted in situ keratomileusis LASIK.

ADVANTAGE - Facilitates control of tissue reshaping process, since process relies on tissue surface shape measurement. Facilitates correction of eye refractive vision errors e.g. near or far sightedness, astigmatism. Attains intended eye corneal tissue shape.

Eye hydration can be also measured, to ensure correct **laser energy** pattern **applied** to eye during actual eye hydration. Ensures effective laser sculpting of eye. Allows use of e.g. visible, ultraviolet or infrared lasers, deuterium lamps, arc lamps, as excitation light energy.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of a surface topography system.

Eye (2)
Corneal tissue (4)
Fluorescent light energy (14)
Light energy source (16)
Excitation light energy (18)
Illumination system (20)
Detector (26)
Computer (30)
pp; 46 DwgNo 2/13

19/5/28 (Item 25 from file: 350)

013309507 **Image available**
WPI Acc No: 2000-481444/200042
XRPX Acc No: N00-357827

Device for exposure of internal sections of human organ to ultrasound; has bowl-shaped piezoelectric ultrasound **source and container with** contact **liquid and flexible membrane forming application surface**

Patent Assignee: DOGADOV A A (DOGA-I); GLADILIN A V (GLAD-I); KONOPATSKAYA I I (KONO-I)
Inventor: DOGADOV A A; GLADILIN A V; KONOPATSKAYA I I
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
RU 2139745	C1	19991020	RU 98112216	A	19980623	200042	B

Priority Applications (No Type Date): RU 98112216 A 19980623
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
RU 2139745	C1			A61N-007/00	

Abstract (Basic): RU 2139745 C1

NOVELTY - The device has a bowl-shaped piezoelectric focusing ultrasound source connected to a power amplifier, the input of which is supplied with voltage from a modulator connected to a generator. The generator is manufactured for adjustment of voltage characteristics during excitation and is positioned on a container filled with contact liquid. The application surface is shaped as a flexible membrane arranged on the surface of the object to be exposed.

DETAILED DESCRIPTION - Piezoelements of the focusing ultrasonic radiator have varying thicknesses and radii of curvature according to angle. The ratio of the maximum curvature radius to the minimum curvature radius is two. The ratio of the maximum width of the piezoelement to the minimum width is 1.01-1.2. Provision is also made for a control device and an intensity programming device. The control device is connected to a generator and a modulator, and the intensity

programming device is connected between the control device and the modulator. The frequency of alternating-current excitation voltage produced by the generator varies from 1.01-1.2, and the voltage level exciting the radiator changes during operation providing for the required energy distribution in process of exposure.

USE - Noninvasive surgery.

ADVANTAGE - Device allows accurate displacement of exposure area in direction of energy radiation due to change in position of stationary radiator focal area and preset variation of intensity with change of excitation voltage frequency.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic view of the device.

pp; 0 DwgNo 1/3

19/5/32 (Item 29 from file: 350)

DIALOG(R)File 350:Derwent WPIX

007280575

WPI Acc No: 1987-277582/198739

XRAM Acc No: C87-117922

XRPX Acc No: N87-208083

Re-profiling a surface using laser radiation - and a mask to provide a selected working profile

Patent Assignee: SUMMIT TECHN INC (SUMM-N); RAVEN A L (RAVE-I)

Inventor: MARSHALL J; MULLER D F

Number of Countries: 014 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 8705496	A	19870924	WO 87GB5496	A	19870319	198739	B
AU 8771606	A	19871009				198751	
EP 261193	A	19880330	EP 87902116	A	19870319	198813	
JP 1500086	W	19890119	JP 87501832	A	19870319	198909	
US 4994058	A	19910219	US 88124101	A	19880115	199110	
EP 261193	B	19911127				199148	
DE 3774815	G	19920109				199203	
JP 92033220	B	19920602	JP 87501832	A	19870319	199226	
			WO 87GB193	A	19870319		

Priority Applications (No Type Date): GB 866821 A 19860319

Cited Patents: 2.Jnl.Ref; US 3558208; US 4461294

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 8705496	A	E	41		
Designated States (National): AU GB JP US					
Designated States (Regional): AT BE CH DE FR GB IT LU NL SE					
EP 261193	A	E			
Designated States (Regional): AT BE CH DE FR GB IT LI LU NL SE					
EP 261193	B				
Designated States (Regional): AT BE CH DE FR GB IT LI LU NL SE					
JP 92033220	B		11	A61F-009/00	Based on patent JP 1500086
					Based on patent WO 8705496

Abstract (Basic): WO 8705496 A

Laser projects radiation towards a surface to be profiled, with a mask between the laser and the surface and having a predefined profile

of resistance to the laser radiation so that, on irradiation of the mask, a portion of the laser radiation is selectively absorbed and another portion is transmitted to the surface in accordance with the mask profile to selectively erode the surface.

USE/ADVANTAGE - Shaping surfaces of organic material particularly biological tissue such as the cornea of the eye in treatment of myopia and hyperopia. Provides an improved and less traumatic method for reshaping the cornea of the eye without scanning.

0/7

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28/5/1 (Item 1 from file: 347)

DIALOG(R)File 347:JAPIO

08354624 **Image available**

LASER THERAPY APPARATUS

PUB. NO.: 2005-102884 [JP 2005102884 A]
PUBLISHED: April 21, 2005 (20050421)
INVENTOR(s): ENOMOTO MASANORI
APPLICANT(s): NIDEK CO LTD
APPL. NO.: 2003-338952 [JP 2003338952]
FILED: September 30, 2003 (20030930)
INTL CLASS: **A61N-005/06** ; **A61B-018/20**

ABSTRACT

PROBLEM TO BE SOLVED: To provide a laser therapy apparatus improved in visibility of a treated surface.

SOLUTION: This laser therapy apparatus irradiating the skin with a laser beam from therapeutic laser beam source is provided with a handpiece body having a radiation optical system for irradiating a certain position with the laser beam; a window positioned isolatedly from the hand piece body, having optical characteristics of transmitting the laser beam and a visible light, and having a **contact** face making **contact** with the **skin** ; and electronic heat exchanger provided in the handpiece body for cooling the window; and a rod- **shaped** **heat** pipe **thermally** connecting the electronic heat exchanger to the window and also served as a support member making the handpiece body to support the window.

28/5/16 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

016599050 **Image available**

WPI Acc No: 2004-757786/200474
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386

XRPX Acc No: N04-598514

Tissue effect creating method for skin treatment e.g. dermal remodeling **operation, involves creating reverse** thermal **gradient, so that skin surface temperature is lower than tissue temperature**

Patent Assignee: THERMAGE INC (THER-N)

Inventor: KNOWLTON E W; LEVINSON M; WEBER B

Number of Countries: 108 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200489185	A2	20041021	WO 2004US10134	A	20040331	200474	B

Priority Applications (No Type Date): US 2003404971 A 20030331

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200489185	A2	E	57	A61B-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): WO 200489185 A2

NOVELTY - Reverse thermal gradient is created through a skin surface to sufficiently heat underlying tissue site, so that temperature of the skin surface is lower than temperature of the underlying tissue. RF electrode (20) or RF source is operated based on the information stored in memory of the RF source coupled with RF electrode delivering electromagnetic energy through a **skin** surface and **applied** to the underlying tissue.

USE - For skin treatment such as dermal remodeling and tightening, wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal or deactivation, reduction of sebaceous gland activity, hair follicle modification, adipose tissue remodeling or removal, spider vein removal, modification of skin irregularities, creation of scar and nascent collagen, reduction of skin bacterial activity, modification of skin pores size, unclogging of skin pores, modification of fat tissue, muscle tissue and facial tissue and cutting and coagulation of tissue.

ADVANTAGE - Achieves uniform thermal effect across large tissue area. Controls depth of thermal effect to target selected tissue and prevents unwanted thermal damage of target and non-target tissue and reduces adverse effects such as burns and blistering by creating tissue effect using reverse thermal gradients and facilitates operation of RF electrode device, RF source and cooling device by using information stored in memory.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)
housing (14)
valve (16)
electrode assembly (18)
RF electrode (20)
fluid delivery unit (22)
force sensor (44)
spring (48)

pp; 57 DwgNo 1A/13

28/5/20 (Item 12 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015834677 **Image available**
WPI Acc No: 2003-896881/200382
XRAM Acc No: C03-254561
XRPX Acc No: N03-715787
Treating skin e.g. acne scars in skin, photodamaged skin or wrinkled skin, comprises treating subsurface layer of skin with source of energy **to cause stimulation of collagen** remodeling
Patent Assignee: KOOP D E (KOOP-I)
Inventor: KOOP D E
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030040739	A1	20030227	US 2001934356	A	20010821	200382	B

Priority Applications (No Type Date): US 2001934356 A 20010821
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030040739	A1		12	A61B-018/18	

Abstract (Basic): US 20030040739 A1
NOVELTY - Treating skin comprises treating a subsurface layer of skin with a source of **energy** to cause stimulation of **collagen remodeling** , in conjunction with **applying** a wound healing composition to the skin, which improves collagenesis in the skin.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a system for treatment of skin which comprises a source of energy to stimulate collagenesis in the skin without injury to the epidermis (100), and a wound healing promoter composition which enhances a healing response in the skin to accelerate collagenesis, resulting in improved appearance of skin.
ACTIVITY - Dermatological; Vulnerary.
No biological tests or results are given.
MECHANISM OF ACTION - None given.
USE - Used for treating skin e.g. acne scars in skin, photodamaged skin, or wrinkled skin (claimed).
ADVANTAGE - The method improves skin by treating layers of skin and accelerating the collagenesis after treating skin, without damaging the surface or deep skin layers and without causing surface injury to skin.

DESCRIPTION OF DRAWING(S) - The drawing shows a cross-section view of skin tissue.
Epidermis (100)
pp; 12 DwgNo 1/3
?

33/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

017828869 **Image available**
WPI Acc No: 2006-340167/200635
Related WPI Acc No: 2000-411244; 2002-194553; 2003-786383
XRPX Acc No: N06-288188

Medical treatment system for gastro esophageal reflux disease (GERD), has distal end of insertion device controllable to position energy transmitting device in relation to target tissue area

Patent Assignee: BOSTON SCI SCIMED INC (BOST-N)
Inventor: GANZ R A; ZELICKSON B D
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 7043307	B1	20060509	US 96749723	A	19961115	200635	B
			US 99475580	A	19991230		
			US 2001971315	A	20011004		
			US 2003633820	A	20030804		

Priority Applications (No Type Date): US 96749723 A 19961115; US 99475580 A 19991230; US 2001971315 A 20011004; US 2003633820 A 20030804
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 7043307	B1		8	A61B-018/18	Cont of application US 96749723
					Div ex application US 99475580
					Cont of application US 2001971315
					Cont of patent US 6073052
					Div ex patent US 6321121
					Cont of patent US 6604004

Abstract (Basic): US 7043307 B1

NOVELTY - An energy transmitting device (16A), located at the distal end (24) of an insertion device (12) and electrically connected to an energy source through the insertion device, has an expandable portion which extends radially from the insertion device, and an antenna located in exterior surface of expandable portion. The distal end of insertion device is controllable to position the energy transmitting device in relation to target tissue area.

USE - For treatment of gastro esophageal reflux disease (GERD).

ADVANTAGE - Obtains sufficient collagen shrinkage to tighten the lower esophageal sphincter and prevent reflux by **heating** the sphincter **tissue** within the appropriate range. Enables use of coolant to inflate the balloon to prevent damage to mucosa while achieving **collagen** shrinkage in sub mucosa resulting in the tightening of lower esophageal sphincter. Enables toning or **tightening** **tissue** within the lower esophageal to treat gastro esophageal reflux disease on outpatient basis with safe, simple procedure with decreased aftercare, treatment and pain.

DESCRIPTION OF DRAWING(S) - The figure shows the perspective view of a lower esophageal sphincter tightening device.

Insertion device (12)
Energy transmitting device (16A)
Balloon (20A)
Distal end (24)
Esophageal sphincter (44)
pp; 8 DwgNo 3/4

33/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

017681707 **Image available**
WPI Acc No: 2006-192973/200620
XRPX Acc No: N06-166244
Discrete skin volume heating system for e.g. loose skin treatment, has voltage source configured to apply voltage to electrode so as to simultaneously heat skin volumes to coagulation temperature when applicator is applied to skin
Patent Assignee: SYNERON MEDICAL LTD (SYNE-N)
Inventor: KREINDEL M
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20060047281	A1	20060302	US 2004931271	A	20040901	200620	B

Priority Applications (No Type Date): US 2004931271 A 20040901
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20060047281	A1		6	A61B-018/14	

Abstract (Basic): US 20060047281 A1
NOVELTY - The system has an applicator (13a) with an electrode having spaced apart protruding conducting units configured to contact a skin surface at a set of discrete location. A voltage source is configured to apply a voltage to the electrode so as to generate an electrical current in the skin for simultaneously heating skin volumes to a coagulation temperature when the applicator is applied to the skin surface.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for simultaneously heating a set of discrete skin volumes to a coagulation temperature.
USE - Used for simultaneously heating discrete skin volumes to a coagulation temperature for e.g. loose **skin** treatment, wrinkle treatment, **collagen remodeling**, **skin tightening**, sub- **cutaneous** fat treatment and **skin** resurfacing.
ADVANTAGE - The voltage source is configured to apply the voltage to the electrode so as to simultaneously heat the skin volumes to coagulation temperature when the applicator is applied to skin, thus enhancing drug penetration within the skin and avoiding significant damage of the skin surface.
DESCRIPTION OF DRAWING(S) - The drawing shows an applicator for use in a discrete skin volume heating system.
Electrode (1)
Skin volumes (4)
Flat region (9)
Housing (10)
Applicator (13a)
pp; 6 DwgNo 2/4

33/5/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015724183 **Image available**
WPI Acc No: 2003-786383/200374
Related WPI Acc No: 2000-411244; 2002-194553; 2006-340167
XRPX Acc No: N03-630136
Lower esophageal sphincter tightening device for treating gastroesophageal reflux disease, transmits energy to target tissue of lower esophageal sphincter, for heating target tissue to specified temperature
Patent Assignee: GANZ R A (GANZ-I); ZELICKSON B D (ZELI-I)
Inventor: GANZ R A; ZELICKSON B D
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6604004	B1	20030805	US 96749723	A	19961115	200374	B
			US 99475580	A	19991230		
			US 2001971315	A	20011004		

Priority Applications (No Type Date): US 96749723 A 19961115; US 99475580 A 19991230; US 2001971315 A 20011004
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6604004	B1		8	A61B-018/18	Cont of application US 96749723
					Cont of application US 99475580
					Cont of patent US 6073052
					Cont of patent US 6321121

Abstract (Basic): US 6604004 B1
NOVELTY - The device has an energy transmitting device (16A) attached to outer surface of a balloon (20A) of an insertion device (12) comprising an endoscope. The energy transmitting device has several antennae which transmit electromagnetic energy generated by an energy source to a target tissue of a lower esophageal sphincter (44) so that lower esophageal sphincter tissue is heated to a temperature greater than 50degreesC.
USE - Lower esophageal sphincter tightening device for treatment of gastroesophageal reflux disease (GERD).
ADVANTAGE - The heating of the sphincter tissue within the appropriate temperature range achieves sufficient **collagen** shrinkage to **tighten** the lower esophageal sphincter.
DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of the lower esophageal sphincter tightening device.
insertion device (12)
energy transmitting device (16A)
balloon (20A)
lower esophageal sphincter (44)
stomach (46)
pp; 8 DwgNo 3/4

33/5/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

015684693 **Image available**

WPI Acc No: 2003-746882/200370
XRPX Acc No: N03-598563

Ablation zone creating method in e.g. laser eye surgery, involves arranging blend zone peripheral to central optical zone and partially within optical zone of eye

Patent Assignee: VISX INC (VISX-N)
Inventor: GROSS E; HOFER R; WONG J
Number of Countries: 105 Number of Patents: 008
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20030176855	A1	20030918	US 2002100231	A	20020314	200370	B
WO 200377795	A2	20030925	WO 2003US7903	A	20030312	200373	
AU 2003214184	A1	20030929	AU 2003214184	A	20030312	200432	
EP 1482884	A2	20041208	EP 2003711592	A	20030312	200480	
			WO 2003US7903	A	20030312		
TW 200303741	A	20030916	TW 2003105549	A	20030314	200557	
MX 2004008924	A1	20050101	WO 2003US7903	A	20030312	200564	
			MX 20048924	A	20040914		
JP 2006505297	W	20060216	JP 2003575852	A	20030312	200614	
			WO 2003US7903	A	20030312		
AU 2003214184	A8	20051020	AU 2003214184	A	20030312	200615	

Priority Applications (No Type Date): US 2002100231 A 20020314
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030176855	A1		24	A61F-009/07	
WO 200377795	A2	E		A61F-000/00	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW				
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
AU 2003214184	A1			A61F-009/07	Based on patent WO 200377795
EP 1482884	A2	E		A61F-009/007	Based on patent WO 200377795
Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
TW 200303741	A			A61F-009/009	
MX 2004008924	A1			A61F-009/007	Based on patent WO 200377795
JP 2006505297	W		24	A61F-009/007	Based on patent WO 200377795
AU 2003214184	A8			A61F-009/007	Based on patent WO 200377795

Abstract (Basic): US 20030176855 A1

NOVELTY - A blend zone (142) is arranged in the periphery of the central optical zone (140), and partially within an optical zone of the eye. The optical power in the blend zone gradually decreases as a linear monotonic function with respect to the increasing radius from the central optical zone.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for system for re-profiling surface of cornea of eye.

USE - For selectively ablating corneal tissues during laser eye surgery such as photorefractive keratectomy (PRK), phototherapeutic keratectomy (PTK), laser in situ keratomileusis (LASIK), laser assisted epithelium keratomileusis (LASEK), for treating optical conditions such as myopia, hyperopia, presbyopia, astigmatism, irregular astigmatism

and certain anatomical features such as large pupil diameters and thin corneal tissue. Also for treating wide variety of materials such as plastic, polymethylacrylate (PMMA), porcine, bovine corneal tissue. Also for use in alternative eye treatment procedure such as radial keratotomy, **collagenous** corneal **tissue thermal remodeling** .

ADVANTAGE - Avoids abrupt changes in the peripheral areas of the ablation profile, by providing ablation zones having decreased angles at the ablation edges. Thereby reduces night vision problems and enhance flap positioning.

DESCRIPTION OF DRAWING(S) - The figure shows an ablation profile for treating the cornea.

ablation zone (103)
cornea (104)
central optical zone (140)
blend zone (142)
original contour (144)
ablated contour7 (146)
pp; 24 DwgNo 5C/11

33/5/7 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014996579 **Image available**
WPI Acc No: 2003-057094/200305
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N03-044171

Skin smoothing method for human being, involves delivering energy through skin surface to tissue site for smoothing contour irregularities of skin

Patent Assignee: THERMAGE INC (THER-N)
Inventor: KNOWLTON E W
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6470216	B1	20021022	US 95435822	A	19950505	200305	B
			US 96583815	A	19960105		
			US 9623377	P	19960806		
			US 97825443	A	19970328		

Priority Applications (No Type Date): US 9623377 P 19960806; US 95435822 A 19950505; US 96583815 A 19960105; US 97825443 A 19970328
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6470216	B1		29	A61F-002/00	CIP of application US 95435822
					CIP of application US 96583815
					Provisional application US 9623377
					CIP of patent US 5755753
					CIP of patent US 6241753

Abstract (Basic): US 6470216 B1

NOVELTY - A conformer coupled with an energy delivery device (18), is fixed to the skin surface and is compressed by an external

mechanical force to produce converging and diverging vectors that smooth skin surface morphology by contracting and distracting the collagen matrix in the soft tissue structure beneath skin surface. Energy such as RF, microwave, ultrasound, electrical or thermal energy is delivered through the skin surface to the **tissue** site to smooth **skin contour** irregularities.

USE - For smoothing contour irregularities of skin of human being.

ADVANTAGE - Provides an apparatus to tighten skin without major surgical intervention.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of a template.

Mechanical force application surface (14)

Electromagnetic energy delivery device (18)

pp; 29 DwgNo 1/22

33/5/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014705437 **Image available**

WPI Acc No: 2002-526141/200256

Related WPI Acc No: 2001-590131

XRAM Acc No: C02-148942

XRPX Acc No: N02-416331

Production of stiffened and stabilized collagenous tissue **in vivo for** tightening **loose skin, involves** heating collagen tissue **to denature collagen with** energy **source and treating with non-toxic cross-linking agent**

Patent Assignee: UNIV MICHIGAN STATE (UNMS)

Inventor: AKSAN A; MCGRATH J J

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6375672	B1	20020423	US 99125521	A	19990322	200256	B
			US 2000532327	A	20000321		

Priority Applications (No Type Date): US 99125521 P 19990322; US 2000532327 A 20000321

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6375672	B1		18	A61F-002/00	Provisional application US 99125521

Abstract (Basic): US 6375672 B1

NOVELTY - A stiffened and stabilized collagenous tissue (14) in vivo in a mammal, is produced by heating the collagenous tissue at a temperature and time sufficient to denature collagen within the tissue, with the energy source to produce a contracted collagenous tissue. The contracted collagenous tissue is treated with a non-toxic cross-linking agent to produce the stiffened and stabilized collagenous tissue.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(1) A system for producing a stiffened and stabilized collagenous tissue in vivo which comprises heater to heat collagenous tissue and a dispenser for introducing non-toxic cross-linking agent to produce a contracted collagen tissue;

(2) A method for treating a tissue containing collagen to stiffen and stabilize the tissue;

(3) An apparatus for treatment of a tissue to stiffen and stabilize the tissue which comprises a holder for mounting the tissue to be treated, energy source for heating the tissue to denature the collagen and to produce a contracted collagen, dispenser for introducing a cross-linking means into contracted collagen to stiffen and stabilize the tissue;

(4) A system for testing a stiffening and stabilization of collagenous tissue which comprises the apparatus and a tester for testing the mechanical strength of the tissue;

(5) A system for stabilizing collagenous tissue in vivo which comprises heater, dispenser and a central processing unit for controlling heater and cross linking agent;

(6) A method for tightening loose skin and stabilizing the tightened skin in vivo in a mammal; and

(7) A method for stiffening and stabilizing capsule surrounding a joint in vivo in a mammal.

USE - For treating collagenous tissue for tightening loose skin and stiffening the capsule surrounding a joint in vivo in a mammal (claimed). Also useful for removing wrinkles and sagging skin caused by old age, and sagging skin caused by over-stretching or prolonged stretching of the skin, joint instability disorder such as glenohumeral instability, glenohumeral joint laxity and excessive joint volume.

ADVANTAGE - The method enables improvement of the mechanical properties and stability of collagenous tissue, thereby safety and reliability of thermotherapy procedures, such as heat-assisted capsular shift procedures which are used to repair joint injuries of the shoulder, elbow, wrist, hand, spine, neck, hip, knee, and ankle, are improved. The method minimizes or substantially abrogates the relaxation over time of the contracted collagen fibers from the contracted form. The tightening of the skin does not result in thinning, therefore multiple skin tightening procedures in the same region of skin can be performed. The method is not invasive.

DESCRIPTION OF DRAWING(S) - The figure shows schematic illustration of chemical and heat assisted capsular shift procedures on capsule of shoulder joint.

Collagen tissue (14)

Orthroscopic camera (22)

pp; 18 DwgNo 3/7

33/5/10 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014641328 **Image available**

WPI Acc No: 2002-462032/200249

Related WPI Acc No: 1999-044390

XRPX Acc No: N02-364232

Skin resurfacing method involves passing radio frequency energy into skin through electrolytic solution to denature collagen **, and to** tighten **outer surface of** skin

Patent Assignee: SHARKEY H R (SHAR-I)

Inventor: SHARKEY H R

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6383184	B1	20020507	US 97886580	A	19970701	200249	B
			US 98193372	A	19981117		

Priority Applications (No Type Date): US 97886580 A 19970701; US 98193372 A 19981117

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6383184	B1		7	A61F-007/00	Div ex application US 97886580 Div ex patent US 5843078

Abstract (Basic): US 6383184 B1

NOVELTY - The opening (28) in the tube (24) of a radio frequency device (16), is placed on the surface of the skin (17). A cooled electrolytic solution is supplied to the outer surface of the skin, through the opening. The radio frequency energy is passed into the skin through the electrolytic solution, to denature **collagen** and to **tighten** the outer surface of the **skin.**

USE - For resurfacing skin using radio frequency energy.

ADVANTAGE - Minimizes burning of the superficial layers of the skin. The electrolytic solution provides cooling effect on the skin.

DESCRIPTION OF DRAWING(S) - The figures show an isometric view and an enlarged fragmentary view of a portion of radio frequency device.

Skin (17)

Opening (28)

pp; 7 DwgNo 1, 2/8

33/5/11 (Item 11 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014373850 **Image available**

WPI Acc No: 2002-194553/200225

Related WPI Acc No: 2000-411244; 2003-786383; 2006-340167

XRPX Acc No: N02-147726

Gastroesophageal reflux treatment method involves heating targeted tissue area comprising lower esophageal sphincter, to achieve toning or tightening of sphincter

Patent Assignee: GANZ R A (GANZ-I); ZELICKSON B D (ZELI-I)

Inventor: GANZ R A; ZELICKSON B D

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6321121	B1	20011120	US 96749723	A	19961115	200225	B
			US 99475580	A	19991230		

Priority Applications (No Type Date): US 96749723 A 19961115; US 99475580 A 19991230

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6321121	B1		8	A61F-002/00	Cont of application US 96749723 Cont of patent US 6073052

Abstract (Basic): US 6321121 B1

NOVELTY - An energy transmitting device (16) is located at one end (24) of endoscope (12) for transmitting energy into a targeted tissue area of esophagus. The endoscope is positioned such that the energy transmitting device is energized by a source (14) to heat the targeted tissue area comprising lower esophageal sphincter (LES) (44) and to alter the tissue for toning or tightening of the sphincter.

USE - For treating gastroesophageal reflux disease (GERD). The treatment method is also implemented to shrink or tone other sphincters located in body and used on urinary or anal sphincter to overcome incontinence.

ADVANTAGE - By heating the sphincter tissue within appropriate range, sufficient **collagen** shrinkage is obtained, to **tighten** the lower esophageal sphincter and prevents reflux.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of LES tightening device.

Endoscope (12)
Heat source (14)
Energy transmitting device (16)
Endoscope end (24)
Lower esophageal sphincter (44)
pp; 8 DwgNo 1/4

33/5/12 (Item 12 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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014343006 **Image available**
WPI Acc No: 2002-163709/200221
Related WPI Acc No: 2002-339839; 2003-862873
XRAM Acc No: C02-050489
XRPX Acc No: N02-124963

Aesthetic medical laser system for producing twin light output laser beam for skin treatment, has gain medium comprising excitable YAPNd crystal provided in resonant cavity having reflecting optic and output coupler

Patent Assignee: TANKOVICH N (TANK-I); LUKASHEV A (LUKA-I)
Inventor: LUKASHEV A; TANKOVICH N
Number of Countries: 100 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20020002367	A1	20020103	US 2000608020	A	20000630	200221	B
			US 2001825516	A	20010403		
WO 200280800	A1	20021017	WO 2002US10481	A	20020403	200270	
US 6613040	B2	20030902	US 2000608020	A	20000630	200359	
			US 2001825516	A	20010403		
AU 2002311801	A1	20021021	AU 2002311801	A	20020403	200433	

Priority Applications (No Type Date): US 2001825516 A 20010403; US 2000608020 A 20000630
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020002367	A1		12	A61B-018/20	CIP of application US 2000608020
WO 200280800	A1	E		A61B-018/22	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ

OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW
US 6613040 B2 A61B-018/20 CIP of application US 2000608020
AU 2002311801 A1 A61B-018/22 Based on patent WO 200280800

Abstract (Basic): US 20020002367 A1

NOVELTY - Aesthetic medical laser system comprises resonant cavity included with gain medium comprising excitable YAP:Nd crystal (2). Cavity has reflecting optic (6) and output coupler (4) to partially reflect light at 1079 nm and 1340 nm in proportions such that output laser beam comprises 1079 nm light and 1340 nm light having intensity ratio of I1079 to I1340, in range of 0.1-10.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(a) Medical treatment process using the laser system;

(b) Process of treating the human skin

USE - For producing twin light output laser beam for skin treatment (claimed), microsurgery of lesions (warts, skin tags, candelomas), other pathologies (tumors, intestine and stomach polyps, vocal cord calcification, uterine cervix lesion ablation), hair removal, skin rejuvenation, treatment of large and small veins and blood vessels, cartilage **reshaping** , **dermis collagen remodeling** , and treatment of cancer tumors in the skin.

ADVANTAGE - The 1079 nm and 1341 nm wavelength beams illuminate the skin and heat the skin uniformly to a depth of few millimeters. The laser system caters for a large variety of laser treatments. The 1079 nm wavelength is more effective because its oxyhemoglobin absorption is 42% closer to the minimum oxyhemoglobin spike at 1100 nm. Hence the blood vessel are heated more uniformly and hair removal is performed by uniform tissue coagulation.

DESCRIPTION OF DRAWING(S) - The figure shows the principle features of the laser system.

YAP:Nd crystal rod (2)
Output coupler (4)
Reflecting optic (6)
pp; 12 DwgNo 1/9

33/5/13 (Item 13 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014178217 **Image available**
WPI Acc No: 2001-662445/200176
Related WPI Acc No: 2001-528332; 2001-529602; 2003-017563; 2005-240631
XRAM Acc No: C01-194590
XRPX Acc No: N01-493521

Face-lifting apparatus for cosmetic procedure, includes shaft, lysing tip, and laser light source connected to shaft

Patent Assignee: PEARL TECHNOLOGY HOLDINGS LLC (PEAR-N)
Inventor: DA SILVA L B; RUBENCHIK A M; WEBER P J
Number of Countries: 001 Number of Patents: 002
Patent Family:
Patent No Kind Date Applicat No Kind Date Week

US 20010025190 A1 20010927 US 99475635 A 19991230 200176 B
US 2000478172 A 20000105
US 2000588436 A 20000606
US 2000749497 A 20001222
US 6974450 B2 20051213 US 99475635 A 19991230 200581
US 2000478172 A 20000105
US 2000588436 A 20000606
US 2000749497 A 20001222

Priority Applications (No Type Date): US 2000749497 A 20001222; US 99475635 A 19991230; US 2000478172 A 20000105; US 2000588436 A 20000606

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010025190	A1		25	A61N-001/00	CIP of application US 99475635
					CIP of application US 2000478172
					CIP of application US 2000588436
US 6974450	B2			A61B-018/18	CIP of application US 99475635
					CIP of application US 2000478172
					CIP of application US 2000588436
					CIP of patent US 6391023
					CIP of patent US 6432101
					CIP of patent US 6440121

Abstract (Basic): US 20010025190 A1

NOVELTY - A face-lifting apparatus comprises a shaft (4) with proximal and distal ends, a lysing tip (2) for lysing tissue, and a laser light source connected to the shaft for providing energy to targeted tissue.

USE - For cosmetic procedure in human face-lifting.

ADVANTAGE - The invention provides quick and accurate face-lifting or tightening maneuvers that minimize the amount of tissue to be removed. It easily maintains the proper dissection plane while lysing and delivers energy to the internal collagenous tissues of the face during tangential movement to induce **skin tightening** . It can position lysing surfaces at a proper level for controlled and safe fibrous tissue separation during a face-lift. It minimizes pain and risk of injury.

DESCRIPTION OF DRAWING(S) - The figure shows a partial top view of the face-lift apparatus.

Lysing tip (2)
Shaft (4)
Handle (6)
Window (50)
pp; 25 DwgNo 1/27

33/5/14 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014045389 **Image available**
WPI Acc No: 2001-529602/200158
Related WPI Acc No: 2001-528332; 2001-662445; 2003-017563; 2005-240631
XRPX Acc No: N01-393094

Face-lift apparatus for use in surgeries, has laser coupled to end of hollow shaft for supplying laser energy to selected tissue region for lysing

Patent Assignee: PEARL TECHNOLOGY HOLDINGS LLC (PEAR-N)
Inventor: DA SILVA L B; RUBENCHIK A M; WEBER P J; KOCHEMASOV G; KULIKOV S; DASILVA L B; WEBER M R
Number of Countries: 094 Number of Patents: 012
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200149194	A2	20010712	WO 2000US35136	A	20001222	200158	B
AU 200125948	A	20010716	AU 200125948	A	20001222	200169	
US 6391023	B1	20020521	US 9885948	A	19980528	200239	
			US 2000588436	A	20000606		
US 6432101	B1	20020813	US 9885948	A	19980528	200255	
			US 2000478172	A	20000105		
US 6440121	B1	20020827	US 9885948	A	19980528	200259	
			US 99475635	A	19991230		
EP 1244390	A2	20021002	EP 2000989446	A	20001222	200265	
			WO 2000US35136	A	20001222		
US 20030014041	A1	20030116	US 9885948	A	19980528	200308	
			US 2000588436	A	20000606		
			US 2002151770	A	20020521		
KR 2002075779	A	20021005	KR 2002708632	A	20020702	200313	
JP 2003523799	W	20030812	WO 2000US35136	A	20001222	200355	
			JP 2001549563	A	20001222		
CN 1420748	A	20030528	CN 2000817834	A	20001222	200357	
BR 200016874	A	20030715	BR 200016874	A	20001222	200365	
			WO 2000US35136	A	20001222		
US 6663618	B2	20031216	US 9885948	A	19980528	200407	
			US 2000588436	A	20000606		
			US 2002151770	A	20020521		

Priority Applications (No Type Date): US 2000588436 A 20000606; US 99475635 A 19991230; US 2000478172 A 20000105; US 9885948 A 19980528; US 2002151770 A 20020521
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200149194	A2	E	45	A61B-018/00	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW				
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
AU 200125948	A			A61B-018/00	Based on patent WO 200149194
US 6391023	B1			A61B-018/18	CIP of application US 9885948
					CIP of patent US 6203540
US 6432101	B1			A61B-018/18	CIP of application US 9885948
					CIP of patent US 6203540
US 6440121	B1			A61B-018/18	CIP of application US 9885948
					CIP of patent US 6203540
EP 1244390	A2	E		A61B-018/14	Based on patent WO 200149194
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
US 20030014041	A1			A61B-018/18	CIP of application US 9885948
					Div ex application US 2000588436
					CIP of patent US 6203540
					Div ex patent US 6391023
KR 2002075779	A			A61B-018/00	
JP 2003523799	W		69	A45D-044/22	Based on patent WO 200149194

CN 1420748	A	A61B-018/14	
BR 200016874	A	A61B-018/00	Based on patent WO 200149194
US 6663618	B2	A61B-018/18	CIP of application US 9885948 Div ex application US 2000588436 CIP of patent US 6203540 Div ex patent US 6391023

Abstract (Basic): WO 200149194 A2

NOVELTY - A hollow shaft (4) has multiple protruding units at the distal end separated by an electrode. A laser is connected to the proximal end of shaft for providing laser energy to the electrode. The electrode transmits laser energy to the tissue to be lyzed through an optical window (50) in the shaft.

USE - For face-lifting.

ADVANTAGE - Reduces surgical cost and the time for a surgeon to do the duties of lyzing and coagulation, as the device performs both tasks as well as aids in maintaining proper positioning and tracking. Provides quick and accurate face-lifting or tightening maneuvers that minimizes the amount of tissue that has to be removed. Maintains proper dissection plane while lyzing and delivers energy to the internal collagenous tissues of the face during tangential movement to induce **skin tightening** .

DESCRIPTION OF DRAWING(S) - The figure shows the partial top view of the face-lift apparatus.

Shaft (4)

Optical window (50)

pp; 45 DwgNo 1/27

33/5/15 (Item 15 from file: 350)

DIALOG(R)File 350:Derwent WPIX

014044283 **Image available**

WPI Acc No: 2001-528496/200158

XRAM Acc No: C01-157585

XRPX Acc No: N01-392164

Disposable light source system for modifying tissue, e.g. sub-epidermal or subepithelial layers, has disposable cell containing chemical reaction mixture, outlet aperture, and chemical reaction initiator

Patent Assignee: QUADRIVIUM LLC (QUAD-N)

Inventor: BERRY M J

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6254594	B1	20010703	US 99364955	A	19990730	200158	B

Priority Applications (No Type Date): US 99364955 A 19990730

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6254594	B1		12	A61B-018/18	

Abstract (Basic): US 6254594 B1

NOVELTY - A disposable light source system (60) has a disposable cell (76), an outlet aperture (82) communicating with a mixture, and a chemical reaction initiator (68). The cell contains the chemical

mixture (62) that produces energy at a wavelength capable of causing modification to a human tissue. Energy is emitted during initiation.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(A) a method of utilizing an energy source for altering mammalian tissue comprising preparing a chemical mixture capable of emitting an electromagnetic radiation absorbed by tissue, photoinitiating the chemical reaction, and directing the electromagnetic radiation to the tissue; and

(B) method of managing a chemical reaction to create a change in tissue which includes combining chemicals capable of undergoing a chemical reaction, photoinitiating the reaction, and exposing a tissue to the energy.

USE - The light source is used for For modifying tissue, e.g. sub-epidermal or subepithelial layers.

ADVANTAGE - The light source is less expensive. It permanently reshapes sublayers of tissue while reducing the energy absorption by the outermost layer of tissue. It stimulates the release of factors that promote new **collagen** growth and a thicker healthier matrix of elastins and **collagen** , thus providing a younger looking skin.

DESCRIPTION OF DRAWING(S) - The figure is a schematic view of a disposable light source system.

Disposable light source system (60)
Chemical mixture (62)
Reaction initiator (68)
Cell (76)
Aperture (82)
Sphere apparatus (84)
Light pipe (86)
Filter (88)
pp; 12 DwgNo 7/8

33/5/16 (Item 16 from file: 350)

DIALOG(R)File 350:Derwent WPIX
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013239370 **Image available**
WPI Acc No: 2000-411244/200035
Related WPI Acc No: 2002-194553; 2003-786383; 2006-340167
XRPX Acc No: N00-307446

Sphincter toning or tightening method for treating gastroesophageal reflux disease, transmits energy with temperature of 50 degrees Celsius to 70 degrees Celsius to sphincter tissue

Patent Assignee: GANZ R A (GANZ-I); ZELICKSON B D (ZELI-I)
Inventor: GANZ R A; ZELICKSON B D
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6073052	A	20000606	US 96749723	A	19961115	200035	B

Priority Applications (No Type Date): US 96749723 A 19961115
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6073052	A		7	A61B-017/36	

Abstract (Basic): US 6073052 A

NOVELTY - Energy from an energy source (14), is transmitted to an energy transmitter (16) through an insertion device (12) to enable a sphincter tissue. The energy level generated to the sphincter tissue, has temperature range of 50 degrees Celsius to 70 degrees Celsius between 1 microsecond and 1 minute to cause **collagen** shrinkage and **tissue tightening.**

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a gastroesophageal reflux disease treatment.

USE - For treating gastroesophageal reflux disease.

ADVANTAGE - Ensures appropriate heating of sphincter tissue to obtain suitable **collagen** shrinkage and **tissue tightening** . Prevents gastroesophageal reflux disease.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of a lower esophageal sphincter tightening device.

Insertion device (12)

Energy source (14)

Energy transmitter (16)

pp; 7 DwgNo 1/4

33/5/17 (Item 17 from file: 350)

DIALOG(R)File 350:Derwent WPIX

011728461 **Image available**

WPI Acc No: 1998-145371/199813

Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1999-277042; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-775929; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386

XRPX Acc No: N98-115007

Skin tightening and tissue contracting method for cosmetic surgery - involves use of RF energy to deliver alternating current through skin to modify impedance of underlying tissue and contract collagen **in tissue**

Patent Assignee: KNOWLTON E W (KNOW-I)

Inventor: KNOWLTON E W

Number of Countries: 077 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9805380	A1	19980212	WO 97US13608	A	19970804	199813	B
AU 9738250	A	19980225	AU 9738250	A	19970804	199829	

Priority Applications (No Type Date): US 9623377 P 19960806

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9805380	A1	E	64	A61N-001/40	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW

Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9738250	A		A61N-001/40	Based on patent WO 9805380

Abstract (Basic): WO 9805380 A

The method involves using an electromagnetic energy delivery device

(10), with an energy delivery surface (12). At least part of this surface is placed against the skin of a patient. Energy, e.g. from a radio frequency (RF) generator (28), is then delivered through the epidermis to the collagen-containing tissue under the skin.

Using this RF energy, a high-frequency alternating current flows from a series of electrodes (26) into the tissue, and produces ionic agitation, which frictionally heats the tissue and creates an inflammatory oedema that raises the extracellular fluid level and the tissue conductance. Subsequently there is an increase in intermolecular and inter-fibre cross linkage and a gradual increase in tissue impedance. Thus the impedance of the underlying tissue is modified, and controlled contraction of the **collagen** is achieved resulting in **tightening** of the **skin** surface.

ADVANTAGE - Promotes thermal conduction rather than ablation of collagen containing tissue. Does not damage the epidermis. Is minimally invasive.

Dwg.1/6

33/5/18 (Item 18 from file: 350)

DIALOG(R)File 350:Derwent WPIX

011008909 **Image available**

WPI Acc No: 1996-505859/199650

Related WPI Acc No: 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-775929; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386

XRPX Acc No: N96-426286

Delivery of thermal energy through skin to collagen containing tissue - has thermal **delivery arrangement conforming to** skin contours **plus electrodes fed by** thermal energy **source to transfer** energy **through** skin

Patent Assignee: THERMAGE (THER-N); KNOWLTON E W (KNOW-I); THERMAGE INC (THER-N)

Inventor: KNOWLTON E W

Number of Countries: 071 Number of Patents: 018

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9634568	A1	19961107	WO 96US6274	A	19960503	199650	B
AU 9657893	A	19961121	AU 9657893	A	19960503	199711	
US 5660836	A	19970826	US 95435544	A	19950505	199740	
US 5755753	A	19980526	US 95435822	A	19950505	199828	
US 5871524	A	19990216	US 95435544	A	19950505	199914	
			US 97794003	A	19970203		
JP 11504828	W	19990511	JP 96533545	A	19960503	199929	
			WO 96US6274	A	19960503		
US 5919219	A	19990706	US 95435822	A	19950505	199933	
			US 97914681	A	19970819		
US 5948011	A	19990907	US 95435822	A	19950515	199943	
			US 97958305	A	19971028		
EP 957791	A1	19991124	EP 96914574	A	19960503	199954	
			WO 96US6274	A	19960503		
US 6241753	B1	20010605	US 95435822	A	19950505	200133	
			US 96583815	A	19960105		

US 6377854	B1	20020423	US 95435822	A	19950505	200232	
			US 96583815	A	19960105		
			US 97990494	A	19971215		
US 6377855	B1	20020423	US 95435822	A	19950505	200232	
			US 96583815	A	19960105		
			US 983098	A	19980106		
US 6381497	B1	20020430	US 95435822	A	19950505	200235	
			US 96583815	A	19960105		
			US 983120	A	19980106		
US 6381498	B1	20020430	US 95435822	A	19950505	200235	
			US 96583815	A	19960105		
			US 983423	A	19980106		
US 6387380	B1	20020514	US 95435544	A	19950505	200239	
			US 96635202	A	19960417		
US 6405090	B1	20020611	US 95435822	A	19950505	200244	
			US 97914681	A	19970819		
			US 99343943	A	19990630		
US 6453202	B1	20020917	US 95435822	A	19950505	200264	
			US 97958305	A	19971028		
			US 99379555	A	19990823		
			US 99399455	A	19990917		
EP 1407720	A1	20040414	EP 96914574	A	19960503	200426	
			EP 200475012	A	19960503		

Priority Applications (No Type Date): US 96583815 A 19960105; US 95435544 A 19950505; US 95435822 A 19950505; US 97794003 A 19970203; US 97914681 A 19970819; US 97958305 A 19971028; US 97990494 A 19971215; US 983098 A 19980106; US 983120 A 19980106; US 983423 A 19980106; US 96635202 A 19960417; US 99343943 A 19990630; US 99379555 A 19990823; US 99399455 A 19990917

Cited Patents: DE 3121683; EP 519415; FR 2609245; US 4140130; US 4381007; US 4889122; US 5143063; US 5282797; WO 9219414

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9634568	A1	E	40	A61B-017/36	
Designated States (National): AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN					
Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG					
AU 9657893	A			A61B-017/36	Based on patent WO 9634568
US 5660836	A		12	A61N-001/40	
US 5755753	A			A61F-007/000	
US 5871524	A			A61F-002/00	Div ex application US 95435544 Div ex patent US 5660836
JP 11504828	W		39	A61B-017/36	Based on patent WO 9634568
US 5919219	A			A61F-002/00	Cont of application US 95435822 Cont of patent US 5755753
US 5948011	A			A61F-002/00	Cont of application US 95435822 Cont of patent US 5755753
EP 957791	A1	E		A61B-017/36	Based on patent WO 9634568
Designated States (Regional): AL AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV MC NL PT SE SI					
US 6241753	B1			A61F-007/00	CIP of application US 95435822 CIP of patent US 5755753
US 6377854	B1			A61F-002/00	Cont of application US 95435822 Cont of application US 96583815

			Cont of patent US 5755753
US 6377855	B1	A61F-002/00	Cont of application US 95435822
			Cont of application US 96583815
			Cont of patent US 5755753
US 6381497	B1	A61F-002/00	Cont of application US 95435822
			Cont of application US 96583815
			Cont of patent US 5755753
US 6381498	B1	A61F-002/00	Cont of application US 95435822
			Cont of application US 96583815
			Cont of patent US 5755753
US 6387380	B1	A61N-001/40	Div ex application US 95435544
			Div ex patent US 5660836
US 6405090	B1	A61F-002/00	Cont of application US 95435822
			Cont of application US 97914681
			Cont of patent US 5755753
			Cont of patent US 5919219
US 6453202	B1	A61B-018/18	Cont of application US 95435822
			Cont of application US 97958305
			Cont of application US 99379555
			Cont of patent US 5755753
			Cont of patent US 5948011
			Cont of patent US 6311090
EP 1407720	A1 E	A61B-018/14	Div ex application EP 96914574
			Div ex patent EP 957791

Designated States (Regional): AL AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV MC NL PT SE SI

Abstract (Basic): WO 9634568 A

An apparatus [10] includes a thermal delivery arrangement including a porous membrane [18] configured to conform to an exterior skin layer surface [12] electromagnetic electrodes [16] are coupled to the thermal delivery arrangement to deliver thermal energy through the skin layer to the underlying collagen tissue. A thermal energy controller is coupled to the thermal delivery arrangement to provide sufficient thermal energy from the electrodes to contract the collagen layer tissue with no deeper than a first degree burn formed on the exterior skin layer surface.

ADVANTAGE - Capable of tightening skin without substantially damaging melanocytes and other epithelial cells.

Dwg.1/6

33/5/19 (Item 19 from file: 350)

DIALOG(R)File 350:Derwent WPIX

010048554 **Image available**

WPI Acc No: 1994-316265/199439

XRPX Acc No: N94-248387

Power supply for heated surgical instrument e.g. scalpel used to thermally reform collagen **of incised** tissue **- provides AC voltage with waveform proportional to AC drive signal and peak-to-peak voltage proportional to DC supply voltage, so providing temp control of resistive heating element**

Patent Assignee: HEMOSTATIC SURGERY CORP (HEMO-N)

Inventor: DENEN D J; KNITTLE J J; WELLER A E

Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5352868	A	19941004	US 92877699	A	19920501	199439	B

Priority Applications (No Type Date): US 92877699 A 19920501
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5352868	A		9	H05B-001/02	

Abstract (Basic): US 5352868 A

The power supply achieves temperature regulation by employing a resistance feedback circuit. The power supply powers the surgical instrument with an AC voltage waveform, and applies a fixed, low level DC signal to the heating element to produce a DC signal proportional to the instantaneous resistance of the heating element.

The DC signal is compared to a setpoint value to obtain a control signal for adjusting the power delivered to the instrument to maintain a constant heating element temperature, even under varying thermal loads.

ADVANTAGE - Allows heating element temperature to be monitored while simultaneously powering element.

Dwg.2/3

33/5/21 (Item 21 from file: 350)

DIALOG(R)File 350:Derwent WPIX

009381777 **Image available**
WPI Acc No: 1993-075255/199309
XRPX Acc No: N93-057855

Electromagnetic heating method for localised heating of body tissues to therapeutic temps. - exposes tissues to electromagnetic heating field produced by hybrid pass band applicator having below cut-off waveguide segment of cross section supporting appropriate mode

Patent Assignee: FRANCONI C (FRAN-I)
Inventor: FRANCONI C; VRBA J
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5186181	A	19930216	US 90558670	A	19900727	199309	B

Priority Applications (No Type Date): US 90558670 A 19900727
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5186181	A		47	A61N-005/00	

Abstract (Basic): US 5186181 A

The electromagnetic applicator method for use in hyperthermic treatments of superficial and subcutaneous tissues involves using radiators integrated in a waveguide segment working below the cutoff frequency, and supporting evanescent modes of propagation which are excited by the radiators to produce a multi-modal field of controlled intensity. Additional radiators are integrated in the same waveguide to generate directly another controlled field.

The multi-modal and directly emitted field are generated with a large variety of field sizes, shapes and penetration features, and are combined to provide a heating field emerging from the waveguide aperture which impinges upon tissue to be heated through a non critical air gap, and allowing heating of a large variety of subcutaneous tumours to temps. causing tumour necrosis without injury to the normal fat and other access tissues. Palliative treatments may be performed on subcutaneous muscle tissues and joints and on hypertrophic tissues.

USE/ADVANTAGE - Heating tumours to destroy cancerous tissue wrt normal tissue, eg prostatic, bladder, mammary, uterus, ovaries, head and neck carcinomas and skin tumours, increases extensibility of collagen tissue, decreases joint stiffness, provides pain relief, increases blood flow, optimised to provide therapeutic temp. elevations in **tissues** exposed of specific size, **shape** and depth.

Dwg.1c/41B

?

36/5/2 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

017660970 **Image available**

WPI Acc No: 2006-172233/200618

XRPX Acc No: N06-148663

Lipolysis method for treating e.g. obesity, involves positioning radio frequency electrodes on protruding region of skin, where electrodes generate current through adipose tissue in protruding region when voltage is applied

Patent Assignee: SYNERON MEDICAL LTD (SYNE-N)

Inventor: KREINDEL M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20060036300	A1	20060216	US 2004918735	A	20040816	200618	B

Priority Applications (No Type Date): US 2004918735 A 20040816

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20060036300	A1		10	A61F-007/00	

Abstract (Basic): US 20060036300 A1

NOVELTY - The method involves deforming a skin by applying negative pressure to the skin such that a region of skin protrudes from surrounding skin. Multiple radio frequency electrodes are positioned on the protruding region of the skin. The electrodes generate an electrical current through an adipose tissue in the protruding region when a voltage is applied to the electrodes, and finally the skin surface is cooled.

USE - Used for treating obesity, cellulite, loose skin and wrinkle.

ADVANTAGE - The method effectively damages subcutaneous adipose tissue, thereby reducing body weight, cellulite, loose skin, and wrinkle, and tightening body surface and skin, and **remodelling collagen** , in a cost effective manner and without damaging the skin.

DESCRIPTION OF DRAWING(S) - The drawing shows an applicator for **application** of **radio frequency energy** to a protruding region of skin.

Applicator body (103)
Bell shaped chamber (104)
Electrodes (121, 122)
Adipose tissue (132)
Heat exchangers (141-143)
pp; 10 DwgNo 1/4

36/5/3 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

017434817 **Image available**
WPI Acc No: 2005-758496/200577
Related WPI Acc No: 2002-519996; 2002-636741; 2004-082387; 2004-082401
XRPX Acc No: N05-625928

Skin treatment apparatus for e.g. tissue remodeling, lifting and tightening skin, and smoothing skin texture, has LED laser bar which includes multiple emitters of optical energy for creating treatment islets in patient's skin

Patent Assignee: PALOMAR MEDICAL TECHNOLOGIES INC (PALO-N)
Inventor: ALTSHULER G B; CHILDS J J; EROFEEV A V; SMIRNOV M Z; YAROSLAVSKY I; TABATADZE D
Number of Countries: 109 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200599369	A2	20051027	WO 2005US11083	A	20050401	200577 B
US 20060004306	A1	20060105	US 2004561052	P	20040409	200603
			US 2004614382	P	20040929	
			US 2004620734	P	20041021	
			US 2005641616	P	20050105	
			US 200598015	A	20050401	
US 20060004347	A1	20060105	US 2000258855	P	20001228	200603
			US 2001272745	P	20010302	
			US 200133302	A	20011227	
			US 200280652	A	20020222	
			US 2002389871	P	20020619	
			US 2003465137	A	20030619	
			US 2004561052	P	20040409	
			US 2004614382	P	20040929	
			US 2004620734	P	20041021	
			US 2005641616	P	20050105	
			US 200598036	A	20050401	
US 20060020309	A1	20060126	US 2004561052	P	20040409	200609
			US 2004614382	P	20040929	
			US 2004620734	P	20041021	
			US 2005641616	P	20050105	
			US 200597841	A	20050401	
US 20060058712	A1	20060316	US 2000258855	P	20001228	200620
			US 2001272745	P	20010302	
			US 200133302	A	20011227	
			US 200280652	A	20020222	
			US 2002389871	P	20020619	
			US 2003465137	A	20030619	
			US 2004561052	P	20040409	
			US 2004614382	P	20040929	

US 2004620734 P 20041021
US 2005641616 P 20050105
US 200598000 A 20050401

Priority Applications (No Type Date): US 2005641616 P 20050105; US 2004561052 P 20040409; US 2004614382 P 20040929; US 2004620734 P 20041021 ; US 200598015 A 20050401; US 2000258855 P 20001228; US 2001272745 P 20010302; US 200133302 A 20011227; US 200280652 A 20020222; US 2002389871 P 20020619; US 2003465137 A 20030619; US 200598036 A 20050401; US 200597841 A 20050401; US 200598000 A 20050401

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200599369	A2	E	238	A61N-000/00	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
US 20060004306	A1			A61H-001/02	Provisional application US 2004561052
					Provisional application US 2004614382
					Provisional application US 2004620734
					Provisional application US 2005641616
US 20060004347	A1			A61B-018/18	Provisional application US 2000258855
					Provisional application US 2001272745
					CIP of application US 200133302
					CIP of application US 200280652
					Provisional application US 2002389871
					CIP of application US 2003465137
					Provisional application US 2004561052
					Provisional application US 2004614382
					Provisional application US 2004620734
					Provisional application US 2005641616
US 20060020309	A1			A61N-005/06	Provisional application US 2004561052
					Provisional application US 2004614382
					Provisional application US 2004620734
					Provisional application US 2005641616
US 20060058712	A1			A61H-001/00	Provisional application US 2000258855
					Provisional application US 2001272745
					CIP of application US 200133302
					CIP of application US 200280652
					Provisional application US 2002389871
					CIP of application US 2003465137
					Provisional application US 2004561052
					Provisional application US 2004614382
					Provisional application US 2004620734
					Provisional application US 2005641616

Abstract (Basic): WO 200599369 A2

NOVELTY - The skin treatment apparatus has a housing having a portion that defines a target treatment area on the patient's skin

(150) when placed in proximity to the patient's skin, and an LED laser bar mounted within the housing for **applying** optical **energy** to the target area. The LED bar includes multiple emitters of optical energy for creating treatment islets in the patient's skin.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(A) a method for performing a treatment on a target area of a patient's skin beneath a skin fold; a composition for use in performing a treatment on a target area of a patient's skin.

USE - For e.g. tissue remodeling, lifting and **tightening** skin, smoothing skin texture, promoting **collagen** production, removing tattoos, increasing permeability of stratum corneum, treating acne, treating hypertrophic scars, reducing body odor, removing warts and calluses, treating psoriasis, improving wound and burn healing, reducing cellulite or fat volume, decreasing body hair, ablation or welding of internal epithelia, and creation of identification patterns.

ADVANTAGE - More energy can be delivered to an islet without producing a thermal islet or damaged islet, and/or the risk of bulk tissue damage can be lowered.

DESCRIPTION OF DRAWING(S) - The figure shows an exemplary cross-section of a human skin.

Skin (150)
Dermis (170)
Reticular layer (171)
Papillary layer (172)
Epidermis (180)
Sweat gland (193)
pp; 238 DwgNo 1/68

36/5/4 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

016990683 **Image available**
WPI Acc No: 2005-315000/200532
Related WPI Acc No: 2001-343545; 2001-514261
XRPX Acc No: N05-257591

Device for producing hemostasis, tissue closure and vessel closure in therapeutic application , **has probe with** thermal energy **source inserted into passageway to emit thermal energy and heat surrounding tissue to coagulate tissue and blood**

Patent Assignee: THERUS CORP (THER-N)
Inventor: PEROZEK D M; WENG L; ZHANG J
Number of Countries: 108 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200530295	A2	20050407	WO 2004US31506	A	20040923	200532	B
US 20050240170	A1	20051027	US 99163466	P	19991025	200571	
			US 2000696076	A	20001025		
			US 2002413118	P	20020924		
			US 2003671417	A	20030924		

38/5/2 (Item 2 from file: 347)

DIALOG(R)File 347:JAPIO

07506412
METHOD FOR PROLIFERATING CELL

PUB. NO.: 2003-000233 [JP 2003000233 A]
PUBLISHED: January 07, 2003 (20030107)
INVENTOR(s): SHIMOZAKI ISAO
TAKEUCHI AKIRA
ASAMI KAZUMI
SHIMIZU MASAO
APPLICANT(s): SHIMOZAKI ISAO
TAKEUCHI AKIRA
ASAMI KAZUMI
SHIMIZU MASAO
APPL. NO.: 2001-234224 [JP 2001234224]
FILED: June 19, 2001 (20010619)
INTL CLASS: C12N-005/06; A61L-027/00

ABSTRACT

PROBLEM TO BE SOLVED: To provide a method for efficiently proliferating cells through the activation of proliferation potency thereof by imparting **thermal** stimulation to epithelial cells or interstitial cells.

SOLUTION: The **thermal** stimulation is imparted to the cell to activate the decomposition and reconstruction of **collagen** and enhance the **remodeling** function of the extracellular matrix and resultantly to prorate the physiological proliferation reactions of the cells.

38/5/5 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

017388482 **Image available**
WPI Acc No: 2005-712137/200573
Related WPI Acc No: 2005-712133; 2005-810854
XRPX Acc No: N05-584813
Tissue reshaping apparatus for treating dermatological disorder, has control module that varies energy characteristics supplied to energy source
Patent Assignee: MANSTEIN D (MANS-I); GEN HOSPITAL CORP (GEHO)
Inventor: MANSTEIN D
Number of Countries: 109 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20050222565	A1	20051006	US 2004558476	P	20040401	200573	B
			US 200598030	A	20050401		
WO 200596979	A1	20051020	WO 2005US11096	A	20050401	200573	

Priority Applications (No Type Date): US 2004558476 P 20040401; US 200598030 A 20050401
Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes
US 20050222565 A1 14 A61B-018/14 Provisional application US 2004558476

WO 200596979 A1 E A61B-018/14
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): US 20050222565 A1

NOVELTY - An energy source (320) communicates with multiple needles (350) attached to a base (310) that is coupled to a housing (340). A control module (330) varies energy characteristics supplied to the energy source.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a skin treating method.

USE - For treating dermatological disorder.

ADVANTAGE - Ensures uniform skin tightening by stimulating wound healing and collagen growth via supplied **energy** . Ensures safe and effective treatment for improving skin appearance with minimum side effect. Allows reshaping of pliant **heated** cartilage to desired form with minimal invasive technique.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic block diagram of the tissue reshaping apparatus.

Base (310)
Energy source (320)
Control module (330)
Housing (340)
Needles (350)
pp; 14 DwgNo 3/4

38/5/13 (Item 10 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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015713729 **Image available**
WPI Acc No: 2003-775929/200373
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N03-621587
Collagen matrix remodeling apparatus used for plastic surgery, delivers radio frequency energy through semi-solid template, to selected collagen-containing tissue site
Patent Assignee: THERMAGE INC (THER-N)
Inventor: KNOWLTON E W
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No Kind Date Applicat No Kind Date Week

US 6438424	B1	20020820	US 95435882	A	19950505	200373	B
			US 96583815	A	19960105		
			US 9623377	P	19960806		
			US 97827237	A	19970328		
			US 983180	A	19980105		

Priority Applications (No Type Date): US 9623377 P 19960806; US 95435882 A 19950505; US 96583815 A 19960105; US 97827237 A 19970328; US 983180 A 19980105

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6438424	B1		30	A61F-002/00	CIP of application US 95435882 CIP of application US 96583815 Provisional application US 9623377 Cont of application US 97827237

Abstract (Basic): US 6438424 B1

NOVELTY - A delivery device delivers the radio frequency energy through a semi-solid template, to a selected collagen- containing tissue site, by contacting the epidermis skin surface of the tissue side site with the tissue contacting surface of template.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for method of treating skin surface.

USE - For remodeling collagen matrix in collagen containing tissue site, during plastic surgery.

ADVANTAGE - The skin is tightened with controlled remodeling of collages, without major surgical intervention.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic view of the semi-solid template.

handle (11)

mechanical force application surface (14)

pp; 30 DwgNo 17/22

38/5/17 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

011394650 **Image available**

WPI Acc No: 1997-372557/199734

Related WPI Acc No: 1996-505859; 1998-145322; 1998-145371; 1999-277042; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-775929; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386

XRPX Acc No: N97-309408

Method forming and contracting scar collagen below tissue surface - delivers energy for sufficient time to induce scar collagen formation in selected tissue site with no deeper than first degree burn formed on tissue surface, scar collagen is then contracted

Patent Assignee: KNOWLTON E W (KNOW-I)

Inventor: KNOWLTON E W

Number of Countries: 073 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9724992	A1	19970717	WO 97US162	A	19970102	199734	B
AU 9715273	A	19970801	AU 9715273	A	19970102	199748	

			WO 97US162	A	19970102		
JP 2001513654	W	20010904	JP 97525330	A	19970102	200165	
			WO 97US162	A	19970102		

Priority Applications (No Type Date): US 96583815 A 19960105
Cited Patents: DE 3121683; EP 519415; FR 2609245; US 4140130; US 4381007; US 4889122; US 5143063; US 5282797; WO 9219414
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9724992	A1	E	35	A61B-017/38	
AU 9715273	A				Based on patent WO 9724992
JP 2001513654	W		34	A61B-018/18	Based on patent WO 9724992

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG UZ VN
Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG

Abstract (Basic): WO 9724992 A

The method provides an apparatus (fig 5) with an electromagnetic energy source and a delivery mechanism. The latter is positioned on the tissue surface and the energy produced and delivered through the tissue surface to the selected tissue site.

The energy is delivered for a sufficient time to induce scar collagen formation in the selected tissue site with no deeper than a first degree burn formed on the tissue surface. The scar collagen is then contracted. The electromagnetic energy is transcutaneously or percutaneously or transmucosally or permucosally delivered to the site.

USE - For initiating formation and healing scar collagen or bony callus, and subsequently remodeling scar collagen or bony callus.

ADVANTAGE - Carries out thermal **remodeling** and contraction of **collagen** without surgical scarring or pigmentary side effects.

Dwg.5/6

38/5/21 (Item 18 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009164807 **Image available**
WPI Acc No: 1992-292248/199235
Related WPI Acc No: 1991-006565; 1994-126302; 1995-035560; 1995-382729
XRPX Acc No: N92-223885

Collagen treatment laser e.g. for ophthalmological corneal reshaping - irradiates tissue with coherent energy in 1.8-2.55 micron wavelength band, measuring corneal shape to determine alteration

Patent Assignee: SAND B J (SAND-I)
Inventor: SAND B J
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5137530	A	19920811	US 85781225	A	19850927	199235	B
			US 86914169	A	19861001		
			US 8767381	A	19870624		
			US 88170070	A	19880314		

US 88285379	A	19881215
US 89374958	A	19890630
US 90546252	A	19900629

Priority Applications (No Type Date): US 90546252 A 19900629; US 85781225 A 19850927; US 86914169 A 19861001; US 8767381 A 19870624; US 88170070 A 19880314; US 88285379 A 19881215; US 89374958 A 19890630

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5137530	A		9	A61B-017/32	CIP of application US 85781225 Cont of application US 86914169 Cont of application US 8767381 Cont of application US 88170070 CIP of application US 88285379 CIP of application US 89374958 CIP of patent US 4976709

Abstract (Basic): US 5137530 A

Collagen connective tissue shrinkage is achieved by the use of laser coherent energy in the inrared wavelength range of about 1.80 to 2.55 microns, and pref. in the range 2.0 to 2.2 microns, as generated by a solid-state device such as a holmium doped yttrium-fluoride (YLF) or yttrium-aluminium-garnet (YAG) crystal laser.

In an ophthalmological context, the laser keratoplasty uses a laser having these characteristics for **collagen** shrinkage and consequent **reshaping** of the cornea for correction of vision errors or defects. Irradiation and resulting **heating** of the corneal stroma is preceded by measurement or mapping of the untreated cornea contours, and computation of the specific corneal regions to be **heated** to produce the desired corrective reshaping.

ADVANTAGE - Laser is relatively compact and easy to operate, and is capable of generating energy optimally absorbed within collagen tissue based on spectra-absorption coefft. of these wavelengths, without damage or destruction of adjacent tissue.

Dwg.6/6

38/5/22 (Item 19 from file: 350)

008502481 **Image available**

WPI Acc No: 1991-006565/199101

Related WPI Acc No: 1992-292248; 1994-126302; 1995-035560; 1995-382729

XRPX Acc No: N91-005227

Collagen treatment method using laser - enabling controlled thermal shrinkage of collagen tissue using laser irradiation

Patent Assignee: LASER BIOTECH INC (LASE-N); SAND B J (SAND-I)

Inventor: SAND B J

Number of Countries: 034 Number of Patents: 019

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 4976709	A	19901211	US 89374958	A	19890630	199101	B
WO 9100063	A	19910110				199105	
AU 9060342	A	19910117				199117	
EP 480995	A	19920422	EP 90910981	A	19900629	199217	

JP 4506312	W	19921105	JP 90510581	A	19900629	199251
			WO 90US3802	A	19900629	
EP 581339	A2	19940202	EP 90910981	A	19900629	199405
			EP 93117037	A	19900629	
AU 645513	B	19940120	AU 9060342	A	19900629	199409
AU 9459350	A	19940616	AU 9459350	A	19940411	199429
			AU 9060342	A	19900000	
EP 480995	B1	19941019	EP 90910981	A	19900629	199440
			WO 90US3802	A	19900629	
DE 69013508	E	19941124	DE 613508	A	19900629	199501
			EP 90910981	A	19900629	
			WO 90US3802	A	19900629	
ES 2064745	T3	19950201	EP 90910981	A	19900629	199511
EP 480995	A4	19921202	EP 90910981	A	19900000	199524
EP 581339	A3	19941117	EP 93117037	A	19900629	199536
AU 673235	B	19961031	AU 9060342	A	19900629	199651
			AU 9459350	A	19940411	
SG 48899	A1	19980518	SG 963573	A	19900629	199834
CA 2063245	C	19981229	CA 2063245	A	19900629	199911
EP 581339	B1	19991201	EP 90910981	A	19900629	200001
			EP 93117037	A	19900629	
DE 69033376	E	20000105	DE 633376	A	19900629	200009
			EP 93117037	A	19900629	
ES 2139620	T3	20000216	EP 93117037	A	19900629	200016

Priority Applications (No Type Date): US 89374958 A 19890630; US 85781225 A 19850927; US 86914169 A 19861001; US 8767381 A 19870624; US 88170070 A 19880314; US 88285379 A 19881215

Cited Patents: US 4381007; US 4461294; US 4538608; US 4558698; US 4580559; 1.Jnl.Ref; SU 929097; WO 8906519; DD 263447; DE 3535072; US 4326529

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 4976709	A		9		
EP 581339	B1	E		A61F-009/00	Div ex application EP 90910981 Div ex patent EP 480995
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI LU NL SE					
DE 69033376	E			A61F-009/00	Based on patent EP 581339
ES 2139620	T3			A61F-009/00	Based on patent EP 581339
WO 9100063	A				
Designated States (National): AT AU BB BG BR CA CH DE DK ES FI GB HU JP KP KR LK LU MC MG MW NL NO RO SD SE SU					
Designated States (Regional): AT BE CH DE DK ES FR GB IT LU NL OA SE					
EP 480995	A	E	27		Based on patent WO 9100063
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI LU NL SE					
JP 4506312	W		10	A61B-017/36	Based on patent WO 9100063
EP 581339	A2	E	11	A61F-009/00	Related to application EP 90910981
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI LU NL SE					
AU 645513	B			A61B-017/36	Previous Publ. patent AU 9060342 Based on patent WO 9100063
AU 9459350	A			A61B-017/36	Div ex application AU 9060342
EP 480995	B1	E	13	A61B-017/36	Based on patent WO 9100063
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI LU NL SE					
DE 69013508	E			A61B-017/36	Based on patent EP 480995 Based on patent WO 9100063
ES 2064745	T3			A61B-017/36	Based on patent EP 480995
EP 581339	A3				Related to patent EP 480995
AU 673235	B			A61B-017/36	Div ex application AU 9060342

Previous Publ. patent AU 9459350

SG 48899 A1 A61F-009/00
CA 2063245 C A61N-005/06

Abstract (Basic): US 4976709 A

The collagen treatment method uses a laser having characteristics for **collagen** shrinkage and consequent **reshaping** of the cornea for correction of vision errors or defects. Irradiation and resulting **heating** of the corneal stroma is preceded by measurement or mapping of the untreated cornea contours, and computation of the specific corneal regions to be **heated** to produce the desired corrective reshaping.

Timing of energy delivery to the corneal stroma is an important factor in achieving an intracorneal temperature profile which peaks in the generally central and anterior portion of the stroma, while limiting temperature increases to safe and nontraumatic levels in the corneal tissue layers anterior and posterior of the stroma. The energy should be delivered in less than one second, and preferably in about 100 milliseconds (pulse or burst modes) to position the peak temperature correctly within the stroma. These techniques enable the use of irradiating wavelengths in the 1.80-2.55 micron range with relatively low absorption coefficients in the general range of 15 to 120 cm-1.

USE/ADVANTAGE - Oohathalmological correal reshaping. Half-life of corneal collagen undisturbed. (9pp

?

40/5/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

017710048
WPI Acc No: 2006-221319/200623
Related WPI Acc No: 1994-037124; 1994-058400; 1994-279414; 1995-006278; 1995-006284; 1995-006285; 1995-098529; 1995-200153; 1995-240431; 1995-254879; 1995-263687; 1995-344425; 1995-357865; 1996-019735; 1996-068670; 1996-068671; 1996-096969; 1996-238605; 1996-362423; 1996-424512; 1997-164984; 1997-164985; 1997-393311; 1997-434801; 1997-434802; 1997-434803; 1997-434804; 1997-558641; 1997-558642; 1997-558643; 1997-558644; 1997-558645; 1998-018166; 1998-018167; 1998-018168; 1998-018169; 1998-018252; 1998-100793; 1998-120291; 1998-158711; 1998-168283; 1998-216998; 1998-506432; 1998-506433; 1998-506445; 1998-520783; 1998-567504; 1999-044369; 1999-131796; 1999-131798; 1999-444300; 1999-444301; 1999-518497; 1999-518712; 1999-527406; 1999-527407; 1999-579814; 1999-600987; 2000-013328; 2000-204831; 2000-237739; 2001-060948; 2001-060949; 2001-060950; 2001-060951; 2001-060952; 2001-060953; 2001-060954; 2001-060956; 2001-112019; 2001-137545; 2001-159609; 2001-201561; 2001-326969; 2001-328305; 2001-432031; 2002-082278; 2002-088763; 2002-179338; 2002-214905; 2002-682392; 2002-696720; 2003-103019; 2003-341784; 2003-765678; 2003-776578; 2004-200457; 2004-409950; 2004-466625; 2004-625141; 2004-774396; 2005-466603; 2005-552282; 2006-260054
XRAM Acc No: C06-072707
XRPX Acc No: N06-190101

Tissue heat **treatment of** tissue **sample in sphincters involves inserting catheter comprising set of electrodes and device for extending electrodes into** tissue **sample into body and delivering** electromagnetic

energy **to** tissue **sample**
Patent Assignee: EDWARDS S D (EDWA-I); THOMAS S W H (THOM-I)
Inventor: EDWARDS S D; THOMAS S W H
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20060058780	A1	20060316	US 99356110	A	19990716	200623 B
			US 2005207677	A	20050818	

Priority Applications (No Type Date): US 99356110 A 19990716; US 2005207677 A 20050818
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20060058780	A1		19	A61F-002/00	Cont of application US 99356110

Abstract (Basic): US 20060058780 A1

NOVELTY - **Tissue heat** treatment of a **tissue** sample involves inserting a catheter comprising a set of electrodes and device for extending at least one of the set of electrodes into the tissue sample into a body at a selected position; and delivering electromagnetic energy comprising radio frequency energy at 400 - 500 kilohertz to the tissue sample with at least one of the set of electrodes.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for an apparatus for **heat** treatment of a **tissue** sample comprising a catheter having a proximal segment and a distal segment for insertion into a body at a selected position; a set of electrodes connected to the distal segment of the catheter; device connected to the proximal segment of the catheter for positioning extending at least one of the set of electrodes into the **tissue** sample; and device for delivering **electromagnetic energy** to the **tissue** sample with at least one of the set of electrodes.

USE - For **heat** treatment of **tissue** (claimed), particularly in the sphincters, esophagus, sinuses, and other internal body orifices and structures such as the rectum, colon, esophagus, vagina, penis, larynx or pharynx.

ADVANTAGE - The inflatable balloon can also serve to anchor the catheter in place and prevent the catheter from being expelled from the body. The inflatable balloon can also insure that locally administered drugs remain in the area where most needed. Inflation of the balloon triggers the extension of at least one curvilinear electrode into the targeted tissue. Negative pressure deflates the air sac and helps retract the curvilinear electrodes so as to allow the catheter to be removed from the body without damaging adjacent body structures.

pp; 19 DwgNo 0/9

40/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

017516817
WPI Acc No: 2006-028054/200603
XRPX Acc No: N06-024486

Skin treatment e.g. vascular lesion treatment, system, has applicator **comprising lamps surrounding hollow cavity, and reflector reflecting radiation into cavity for providing uniform energy distribution over**

cavity surface
Patent Assignee: SYNERON MEDICAL LTD (SYNE-N)
Inventor: ECKHOUSE S; KREINDEL M
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20050273089	A1	20051208	US 2004858474	A	20040602	200603 B

Priority Applications (No Type Date): US 2004858474 A 20040602
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20050273089	A1		5	A61B-018/20	

Abstract (Basic): US 20050273089 A1

NOVELTY - The system has an applicator comprising housing (114) that is connected to a cable (12). The applicator comprises lamps surrounding a hollow cavity (110). The lamps are connected to a power source through a wire (116) in the cable. The lamps generate broadband optical radiation. A reflector (104) reflects the radiation into the cavity for providing essentially uniform energy distribution over the cavity surface.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for treating **skin** with optical **energy** .

USE - Used for skin treatment e.g. hair removal, vascular lesion treatment, pigmented lesion treatment, acne treatment and **collagen remodeling** .

ADVANTAGE - The reflector reflects the radiation into the cavity for providing essentially uniform energy distribution over the cavity surface, thus preventing the radiation from being absorbed by the epidermis and also preventing the radiation from being attenuated.

DESCRIPTION OF DRAWING(S) - The drawing shows an applicator for use in a skin treatment system.

Cable (12)
Reflector (104)
Hollow cavity (110)
Housing (114)
Wire (116)
pp; 5 DwgNo 2/2

40/5/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

016916343 **Image available**
WPI Acc No: 2005-240631/200525
Related WPI Acc No: 2001-528332; 2001-529602; 2001-662445; 2003-017563
XRAM Acc No: C05-076575
XRPX Acc No: N05-198316
Face tightening apparatus for use in face-lifting, tissue strengthening, or tightening maneuvers, comprises tip, shaft, handle, and protruding mechanisms on distal end of tip
Patent Assignee: WEBER P J (WEBE-I)
Inventor: WEBER P J
Number of Countries: 111 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20050055073	A1	20050310	US 99475635	A	19991230	200525 B
			US 2000478172	A	20000105	
			US 2000588436	A	20000606	
			US 2000749497	A	20001222	
			US 2004903325	A	20040730	
WO 200615131	A1	20060209	WO 2005US26809	A	20050729	200612

Priority Applications (No Type Date): US 2000749497 A 20001222; US 99475635 A 19991230; US 2000478172 A 20000105; US 2000588436 A 20000606; US 2004903325 A 20040730

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20050055073	A1		30	A61F-007/00	CIP of application US 99475635
					CIP of application US 2000478172
					CIP of application US 2000588436
					Cont of application US 2000749497
					CIP of patent US 6391023
					CIP of patent US 6432101
					CIP of patent US 6440121
WO 200615131	A1	E		A61F-007/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KM KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NG NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SM SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU LV MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): US 20050055073 A1

NOVELTY - A face tightening apparatus (310) comprises tip (210), shaft, handle, and protruding mechanisms on distal end of the tip. The protruding mechanisms are separated by energized recessed lysing segment(s). The protruding mechanism together with the recessed lysing segment(s) is made for lysing tissue in plane. A relative protrusion and recession are defined as seen from viewing angle(s).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) treating targeted **tissue** (320) comprising delivering **energy** (300) to target **tissue** via energized relatively recessed lysing segment. A protruding mechanism together with the recessed lysing segment is made for lysing tissue in plane. A relative protrusion and recessions are defined as seen from the viewing angle(s), and controlling the **energy applied** to target **tissue** using **energy** controlling mechanism;and

(2) hair removal comprising delivering **energy** to target **tissue** via energized relatively recessed lysing segment, and controlling the **energy applied** to target **tissue** using **energy** controlling mechanism.

USE - For use in face-lifting, **tissue** strengthening, or **tightening** maneuvers.

ADVANTAGE - The invention provides uniform facial tissue planes that are tunnel free and wall free, thus optimizing face lifting, tightening, and implant delivery. It can be easily, quickly and accurately used. It enhances tissue modification and contraction. It minimizes pain and risk of injury. It maintains proper dissection plane while lysing and offering the capability to deliver **energy** to uniform

tissue planes to induce **skin** tissue **tightening** and strengthening.
DESCRIPTION OF DRAWING(S) - The figure shows application of the apparatus.
Tip (210)
Energy (300)
Face tightening apparatus (310)
Targeted tissue (320)
pp; 30 DwgNo 3/8

40/5/7 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

016707110 **Image available**
WPI Acc No: 2005-031386/200503
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332
XRPX Acc No: N05-027082
Tissue site treatment method for dermal remodeling , **involves cooling** tissue **area beneath** skin **surface to create reverse** thermal **gradient in which temperature of** skin **surface is less than that in tissue area**
Patent Assignee: THERMAGE INC (THER-N)
Inventor: KNOWLTON E W; LEVINSON M; POPE K
Number of Countries: 108 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 2004105861	A2	20041209	WO 2004US16593	A	20040525	200503 B

Priority Applications (No Type Date): US 2003447187 A 20030527
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 2004105861	A2	E	46	A61N-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): WO 2004105861 A2
NOVELTY - The tissue area beneath a **skin** surface coupled with **energy** delivery surface of an electromagnetic energy delivery device, is cooled and a reverse **thermal** gradient in which temperature of **skin** surface is less than that in the tissue area, is created. The tissue area is modified and irregularities of the **skin** surface are decreased, by delivering **electromagnetic** energy.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) method of treating acne scars;
(2) method of treating scars;

(3) method of reducing activity of sebaceous glands;
(4) method of reducing size of sebaceous gland;
(5) method of reducing bacteria activity that create acne;
(6) method of reducing size of skin pores;
(7) method of unclogging clogged skin pores;
(8) method of treating acne;
(9) method of treating hyperhydrosis;
(10) method of removing hair; and
(11) method of inducing growth of air.

USE - For **skin remodeling** /resurfacing and **tightening** , wrinkle removal, elastosis reduction, contraction of **collagen** , acne scar reduction (claimed), sebaceous glands removal/size reduction/deactivation (claimed), reducing activity and size of subcutaneous glands, reduction (claimed) of activity of sebaceous gland, hair follicle removal, adipose **tissue remodeling** /removal, spider vein removal, modification of **contour** irregularities of **skin** surface, creation of scar or nascent **collagen** , reduction (claimed) of bacteria activity of skin, reduction (claimed) of skin pore size, unclogging (claimed) skin pores, modification of skin, skin appendages e.g. sweat glands, sebaceous glands and hair follicles and subcutaneous tissue structures e.g. fat and muscle tissues, wound healing, reducing/inducing growth of hair and treating hyperhydrosis.

ADVANTAGE - Provides uniform **thermal** effect in **tissue** while preventing **thermal** damage to **skin** surface and other non-target tissues. Hence adverse effects and healing time are reduced.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the RF electrode assembly.

hand portion housing (12)
RF electrode (20)
activation button (46)
shroud (50)
RF device (52)
pp; 46 DwgNo 4/6

40/5/8 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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016607598 **Image available**
WPI Acc No: 2004-766332/200475
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2005-031386
XRPX Acc No: N04-604627

Cosmetic tissue effect creating method for skin treatment, involves performing different levels of cooling to skin **surface by generating reverse** thermal **gradient through** skin **surface**

Patent Assignee: THERMAGE INC (THER-N)
Inventor: KNOWLTON E W; LEVINSON M; WEBER B
Number of Countries: 108 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200489460	A2	20041021	WO 2004US10132	A	20040331	200475	B

Priority Applications (No Type Date): US 2003404413 A 20030331
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
WO 200489460 A2 E 43 A61N-000/00
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): WO 200489460 A2

NOVELTY - Different levels of cooling are performed to the **skin** surface, by generating a reverse **thermal** gradient through the **skin** surface, so that the temperature of the skin surface is lower than the temperature of an underlying **tissue** . The **radio frequency** (RF) **energy applied** to the **skin** surface, is set not exceeding 600 joules/cm2 during a single treatment session.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for cosmetic method for inducing formation of scar **collagen** in **collagen** containing tissue site beneath a skin surface during a skin treatment.

USE - For **skin** treatment such as **dermal remodeling** , **dermal tightening** , wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal or deactivation, reduction of sebaceous gland activity, hair follicle modification, adipose **tissue remodeling** or removal, spider vein removal, modification of skin irregularities, creation of scar or nascent **collagen** , reduction of skin bacteria activity, modification of skin pore size, unclogging of skin pores and modification of fat tissue, muscle tissue and facial tissue.

ADVANTAGE - Achieves uniform **thermal** effect across large **tissue** area, controls depth of **thermal** effect to target selected **tissue** . Prevents unwanted **thermal** damage to both target and non-target tissues, and reduces adverse tissue effects such as burns and blistering by generating reverse thermal gradient.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)
housing (14)
valve (16)
RF electrode (20)
cryogenic spray delivery unit (22)
force sensor (44)
pp; 43 DwgNo 1A/13

40/5/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016607597 **Image available**
WPI Acc No: 2004-766331/200475
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304;

2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766332; 2005-031386

XRPX Acc No: N04-604626

Skin surface cooling apparatus for skin treatment, has memory storing information required for operating radio frequency electrode, cryogenic spray delivery unit and energy source

Patent Assignee: THERMAGE INC (THER-N)

Inventor: KNOWLTON E W; LEVINSON M; WEBER B

Number of Countries: 108 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200489459	A2	20041021	WO 2004US10129	A	20040331	200475	B
US 7006874	B2	20060228	US 96583815	A	19960105	200616	
			US 97827237	A	19970328		
			US 97914681	A	19970819		
			US 97942274	A	19970930		
			US 99337015	A	19990630		
			US 2000522275	A	20000309		
			US 200126870	A	20011220		
			US 200272475	A	20020206		
			US 200272610	A	20020206		
			US 2003400187	A	20030325		
			US 2003404250	A	20030331		

Priority Applications (No Type Date): US 2003404250 A 20030331; US 96583815 A 19960105; US 97827237 A 19970328; US 97914681 A 19970819; US 97942274 A 19970930; US 99337015 A 19990630; US 2000522275 A 20000309; US 200126870 A 20011220; US 200272475 A 20020206; US 200272610 A 20020206; US 2003400187 A 20030325

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200489459	A2	E	47	A61N-000/00	
	Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW				
	Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW				
US 7006874	B2			A61F-002/00	CIP of application US 96583815
					CIP of application US 97827237
					CIP of application US 97914681
					CIP of application US 97942274
					Cont of application US 99337015
					CIP of application US 2000522275
					CIP of application US 200126870
					CIP of application US 200272475
					CIP of application US 200272610
					CIP of application US 2003400187
					CIP of patent US 5919219
					CIP of patent US 6241753
					Cont of patent US 6350276
					CIP of patent US 6413255
					CIP of patent US 6425912
					CIP of patent US 6430446

CIP of patent US 6749624

Abstract (Basic): WO 200489459 A2

NOVELTY - A cooling apparatus has a cryogenic spray delivery unit (22) connected to a radio frequency (RF) electrode (20) and configured to generate a reverse **thermal** gradient through a **skin** surface. A memory positioned at the RF electrode, stores information required for operating the cryogenic spray delivery unit, RF electrode and RF energy source.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for apparatus for treating tissue.

USE - For **skin** treatment such as **dermal remodeling** and **tightening** , wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal/deactivation, reduction of activity of sebaceous gland, hair follicle removal, adipose **tissue remodeling** /removal, spider vein removal, modification of **contour** irregularities of **skin** surface, creation of scar or nascent **collagen** , reduction of bacteria activity of skin, reduction of skin pore size and unclogging of skin pores.

ADVANTAGE - Achieves uniform **thermal** effect across large **tissue** area. Controls depth of **thermal** effect to target selected **tissue** . Prevents unwanted **thermal** damage to both target and non-target tissue and reduces adverse tissue effects such as burns and blistering by generating reverse thermal gradient and controlling operation of RF electrode, cryogenic spray delivery unit and RF source based on stored information.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)
housing (14)
valve (16)
electrode assembly (18)
RF electrode (20)
cryogenic spray delivery unit (22)
force sensor (44)
microprocessor (58)
pp; 47 DwgNo 1A/13

40/5/10 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

016599409 **Image available**
WPI Acc No: 2004-758145/200474
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N04-598721

Skin surface cooling apparatus for skin treatment, has memory storing information required for operating radio frequency electrode, cryogenic spray delivery unit and energy source

Patent Assignee: THERMAGE INC (THER-N)
Inventor: KNOWLTON E W; LEVINSON M; STERN R A; WEBER B; STERN R

Number of Countries: 109 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200490939	A2	20041021	WO 2004US9794	A	20040331	200474	B
AU 2003302939	A1	20041021	AU 2003302939	A	20040331	200525	
BR 200403032	A	20050628	BR 20043032	A	20040331	200545	
			WO 2004US9794	A	20040331		
EP 1558164	A2	20050803	EP 2004737226	A	20040331	200551	
			WO 2004US9794	A	20040331		
CN 1697631	A	20051116	CN 200436	A	20040331	200622	

Priority Applications (No Type Date): US 2003404883 A 20030331
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200490939	A2	E	56	H01L-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

AU 2003302939	A1		A61N-005/00	Based on patent WO 200490939
BR 200403032	A		A61N-005/00	Based on patent WO 200490939
EP 1558164	A2	E	A61B-018/18	Based on patent WO 200490939

Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR

CN 1697631	A		A61B-018/18

Abstract (Basic): WO 200490939 A2

NOVELTY - The cooling apparatus has a cryogenic spray delivery unit (22) coupled to a radio frequency (RF) device which has an RF electrode (20) and coupled with an RF energy source. A memory stores information required for operating the RF electrode, cryogenic spray delivery unit and the RF energy source.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) apparatus for treating a tissue; and

(2) apparatus for treating a skin.

USE - For **skin** treatment such as **dermal** **remodeling** and **tightening** , wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal/deactivation, reduction of activity of sebaceous gland, hair follicle removal, adipose **tissue** **remodeling** /removal, spider vein removal, modification of **contour** irregularities of **skin** surface, creation of scar or nascent **collagen** , reduction of bacteria activity of skin, reduction of skin pore size and unclogging of skin pores.

ADVANTAGE - Achieves uniform **thermal** effect across large **tissue** area, controls depth of **thermal** effect to target selected **tissue** , prevents unwanted **thermal** damage to both target and non-target tissue and reduces adverse tissue effects such as burns and blistering by controlling operation of RF electrode, cryogenic spray delivery unit and RF energy source based on information stored in memory.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)

housing (14)

valve (16)
electrode assembly (18)
RF electrode (20)
cryogenic spray delivery unit (22)
force sensor (44)
spring (48)
microprocessor (58)
pp; 56 DwgNo 1A/13

40/5/11 (Item 11 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

016599051 **Image available**
WPI Acc No: 2004-757787/200474
Related WPI Acc No: 1996-505859; 1997-372557; 1998-145322; 1998-145371; 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2002-582304; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2003-833598; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N04-598515
Radio frequency **device for** skin **treatment, has memory storing information required for operating radio frequency electrode, cryogenic spray delivery unit and energy source**
Patent Assignee: THERMAGE INC (THER-N)
Inventor: KNOWLTON E W; LEVINSON M; STERN R; WEBER B
Number of Countries: 108 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200489186	A2	20041021	WO 2004US10140	A	20040331	200474	B

Priority Applications (No Type Date): US 2003404414 A 20030331
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200489186	A2	E	53	A61B-000/00	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
Designated States (Regional): AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): WO 200489186 A2
NOVELTY - A cryogenic spray delivery unit (22) cools the back surface of a radio frequency (RF) electrode (20) connected to an RF energy source. A memory stores information required for the operation of the RF electrode, cryogenic spray delivery unit and the RF energy source.
USE - For **skin** treatment such as **dermal remodeling** and **tightening** , wrinkle reduction, elastosis reduction, scar reduction, sebaceous gland removal/deactivation and reduction of activity of sebaceous gland, hair follicle removal, adipose **tissue remodeling** /removal, spider vein removal, modification of **contour** irregularities

of **skin** surface, creation of scar or nascent **collagen** , reduction of bacteria activity of skin, reduction of skin pore size and unclogging of skin pores.

ADVANTAGE - Achieves uniform **thermal** effect across large **tissue** area. Controls depth of **thermal** effect to target selected **tissue** . Prevents unwanted **thermal** damage to target and non-target tissue and reduces adverse tissue effects such as burns and blistering by controlling operation of RF electrode, cryogenic spray delivery unit and RF energy source based on information stored in memory. Maintains uniform temperature at front surface of RF electrode by cooling RF electrode with cryogenic spray.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the handpiece.

handpiece (10)
housing (14)
valve (16)
electrode assembly (18)
RF electrode (20)
cryogenic spray delivery unit (22)
face sensor (44)
spring (48)
pp; 53 DwgNo 1A/13

40/5/13 (Item 13 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

015771396 **Image available**
WPI Acc No: 2003-833598/200377
Related WPI Acc No: 1999-277042; 2001-024298; 2001-146948; 2002-112909; 2003-057094; 2003-089403; 2003-533114; 2003-671506; 2003-767183; 2003-775929; 2004-729150; 2004-747884; 2004-748339; 2004-757786; 2004-757787; 2004-758145; 2004-766331; 2004-766332; 2005-031386
XRPX Acc No: N03-666367

Cosmetic tissue effect creating method for dermatological **procedures, involves delivering** energy **through** skin **surface to selected** tissue **site for inducing** collagen **formation in site to create cosmetic tissue effect**

Patent Assignee: THERMAGE INC (THER-N)
Inventor: LEVINSON M; STERN R A; WEBER B
Number of Countries: 102 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200386217	A1	20031023	WO 2003US9477	A	20030327	200377	B
AU 2003224788	A1	20031027	AU 2003224788	A	20030327	200436	

Priority Applications (No Type Date): US 2002117990 A 20020405
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200386217	A1	E	36	A61B-018/18	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN

YU ZA ZM ZW
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
AU 2003224788 A1 A61B-018/18 Based on patent WO 200386217

Abstract (Basic): WO 200386217 A1
NOVELTY - The method involves producing energy from a radio frequency electrode (20) and creating a reverse **thermal** gradient through a **skin** surface that has a temperature lower than an underlying **collagen** containing a **tissue** site. The **energy** is delivered through the **skin** surface to the selected tissue site for a sufficient time to induce **collagen** formation in the site to create cosmetic tissue effect.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a kit comprising apparatus for creating cosmetic tissue effect.
USE - Used for creating cosmetic tissue effect on skin surface in dermatological procedures.
ADVANTAGE - The method delivers the **energy** to the selected **tissue** sites through the skin with minimal damage of the skin surface and enables the desired therapeutic effect at the **skin** surface without **tightening** the **skin** .
DESCRIPTION OF DRAWING(S) - The drawing shows a cross-sectional view of the hand piece.
Hand piece (10)
Hand piece housing (14)
Cooling fluidic medium valve unit (16)
Radio frequency electrode (20)
Fluid delivery portion (22)
pp; 36 DwgNo 1/8

40/5/15 (Item 15 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

015459355 **Image available**
WPI Acc No: 2003-521497/200349
Related WPI Acc No: 2000-182877; 2000-182883; 2000-205399; 2000-205418; 2001-167649; 2004-601887; 2005-038593
XRPX Acc No: N03-413734
Collagenous **tissue contracting system used in e.g. urinary incontinence treatment, has probe having electrodes for transmitting** energy **selectively to contract engaged** tissue **, and cooling elements for cooling engaged tissue**
Patent Assignee: SURX INC (SURX-N)
Inventor: INGLE F W; ROY L L
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6572639	B1	20030603	US 9894964	P	19980731	200349	B
			US 98170763	A	19981013		
			US 2000636795	A	20000811		

Priority Applications (No Type Date): US 9894964 P 19980731; US 98170763 A 19981013; US 2000636795 A 20000811

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6572639	B1		27	A61B-018/18	Provisional application US 9894964 Div ex application US 98170763 Div ex patent US 6139569

Abstract (Basic): US 6572639 B1

NOVELTY - A thin flat surface (22) of probe (20) has multiple electrode pairs (26) for transmitting **energy** selectively to contract engaged **tissue** , and cooling elements for cooling the engaged tissue. The electrodes and cooling elements generate alternate **heated** and cooled region across a **tissue** engaged by the probe.

USE - For contracting endopelvic fascia and other support tissues used in treatment of urinary incontinence and also in various therapies including **skin** wrinkle shrinkage, **tightening** stretched tendons and ligaments in knees, ankles and wrist, treatment of droopy eyelids, shrinking large earlobes.

ADVANTAGE - Enables reliable contracting of selective tissues without any injury or collateral damage to the urinary sphincter or other surrounding delicate tissues, thereby enhancing the rate of healing.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of the probe used in tissue contracting system.

Probe (20)

Thin flat surface (22)

Electrode pairs (26)

pp; 27 DwgNo 5/21

40/5/17 (Item 17 from file: 350)

DIALOG(R)File 350:Derwent WPIX

015160991 **Image available**

WPI Acc No: 2003-221519/200321

XRAM Acc No: C03-056290

XRPX Acc No: N03-176755

Tissue treatment system for treating tissue near valve, e.g. chordae tendineae or a papillary muscle of a cardiac valve, to modify flow through valve, comprises catheter, end effector and cinching component

Patent Assignee: NIDUS MEDICAL LLC (NIDU-N)

Inventor: HOUSER R A; RAMEE S R; SADAAT V

Number of Countries: 101 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200303930	A1	20030116	WO 2002US20996	A	20020703	200321	B
US 6626899	B2	20030930	US 99141077	P	19990625	200367	
			US 2000602436	A	20000623		
			US 2001898726	A	20010703		
EP 1411849	A1	20040428	EP 2002749755	A	20020703	200429	
			WO 2002US20996	A	20020703		
AU 2002320248	A1	20030121	AU 2002320248	A	20020703	200452	

Priority Applications (No Type Date): US 2001898726 A 20010703; US 99141077 P 19990625; US 2000602436 A 20000623

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200303930	A1	E	111	A61B-018/18	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
US 6626899	B2			A61B-018/18	Provisional application US 99141077 CIP of application US 2000602436
EP 1411849	A1	E		A61B-018/18	Based on patent WO 200303930
Designated States (Regional): AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
AU 2002320248	A1			A61B-018/18	Based on patent WO 200303930

Abstract (Basic): WO 200303930 A1

NOVELTY - New tissue treatment system comprises:

(i) a catheter;

(ii) an end effector configured to transfer **energy** to the **tissue** at the target site to induce **thermal** shrinkage of **collagen** in the **tissue** to modify flow through a valve; and

(iii) a cinching component having central region and anchoring regions and configured for delivery through the catheter to the tissue

DETAILED DESCRIPTION - New tissue treatment system for treating tissue near a valve to modify flow through the valve comprises:

(a) a first catheter (32) having a distal end region and configured for transluminal delivery of the end region to the target site;

(b) an end effector (34) in communication with the distal end and configured to transfer **energy** to the **tissue** at the target site to induce **thermal** shrinkage of **collagen** in the **tissue** to modify flow through the valve; and

(c) a cinching component having a central region and at least 2 anchoring regions on opposing sides of the central region. The cinching component is configured for delivery through the first catheter or a second catheter to the **tissue** . It has a first **shape** during the delivery and a second shape after the delivery.

INDEPENDENT CLAIMS are also included for:

(I) a method for treating tissue near a valve to modify flow through the valve comprising:

(a) placing a delivery catheter near the tissue;

(b) urging the cinching component through a distal opening defined in the catheter such that the first anchoring region exits the distal opening and attaches to a first area of the tissue; and

(c) further urging the cinching component through the distal opening such that second anchoring region exits the distal opening and attaches to a second area of the tissue.

(II) an apparatus, and assembly for treating tissue near a valve to modify flow through the valve.

USE - The invention is for treating a tissue near a valve to modify flow through the valve (claimed). The invention may also be used to modify flow regulation in other lumens of the body, e.g. urinary sphincter, digestive system valve, leg vein valve.

ADVANTAGE - The invention **thermally** or mechanically treats **tissue** to reconfigure or shrink the tissue in a controlled manner and improve or restore tissue function.

DESCRIPTION OF DRAWING(S) - The figure shows a side view of

treatment system of the invention.
Catheter (32)
End effector (34)
pp; 111 DwgNo 2/54

40/5/21 (Item 21 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013415658 **Image available**
WPI Acc No: 2000-587596/200055
Related WPI Acc No: 1993-242930; 1995-006306; 1995-206153; 1996-476776; 1997-051698; 1997-297829; 1997-297832; 1998-120425; 1998-120493; 1998-530718; 1999-059988; 1999-130298; 1999-179878; 1999-214453; 1999-277173; 1999-312540; 1999-312547; 1999-385169; 1999-395076; 1999-518494; 1999-580571; 2000-062120; 2000-195426; 2000-204827; 2000-237402; 2000-255603; 2000-422843; 2000-531792; 2000-542909; 2001-049631; 2001-069745; 2001-070821; 2001-225913; 2001-343206; 2001-424601; 2001-522540; 2001-646987; 2002-082230; 2002-113415; 2002-113443; 2002-121081; 2002-147711; 2002-163510; 2002-170989; 2002-206288; 2002-214577; 2002-370567; 2002-636083; 2002-691219; 2003-015692; 2003-028464; 2003-254801; 2003-330499; 2003-361993; 2003-371778; 2003-402920; 2003-417299; 2003-419759; 2003-421185; 2003-567867; 2003-576879; 2003-707520; 2003-755934; 2003-778898; 2003-801399; 2003-895627; 2003-898307; 2003-901104; 2003-902058; 2004-167062; 2004-167544; 2004-224783; 2004-238519; 2004-327350; 2005-080255; 2005-457040; 2005-579922; 2005-604205; 2006-008522; 2006-341223
XRPX Acc No: N00-434784
Systems for high frequency electrosurgical tissue contraction has probe with active and return electrodes a specific distance apart
Patent Assignee: ARTHROCARE CORP (ARTH-N)
Inventor: DAVISON T S; EGGERS P E; OLSEN P M; THAPLIYAL H V; WOLOSZKO J
Number of Countries: 082 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200056229	A1	20000928	WO 2000US7718	A	20000322	200055	B
AU 200039129	A	20001009	AU 200039129	A	20000322	200103	

Priority Applications (No Type Date): US 99273612 A 19990322
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200056229	A1	E	79	A61B-017/20	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

AU 200039129	A		A61B-017/20	Based on patent WO 200056229

Abstract (Basic): WO 200056229 A1
NOVELTY - Apparatus has an electrosurgical instrument (5); an active electrode on the instrument shaft; a dispersive return electrode on the shaft spaced from the active electrode so that when they are

submersed in conductive fluid a high frequency voltage difference is applied between the electrodes, the electric fields immediately surround the active electrode and the tissue structures are substantially unaffected by the presence of the return electrode; an electrically insulator between the electrodes; and one or more connectors coupled to the electrodes for connecting the electrodes to a high frequency power source.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following: a) a method for **applying** electrical **energy** to **tissue** at a target site, b) a method for shrinking **collagen** tissue within a joint capsule, c) a system for shrinking **collagen** tissue at a target site on or within a patient's body.

USE - The present invention relates an electrosurgical instrument which employs high frequency voltage to contract soft tissue structures, such as **collagen** connective tissue.

ADVANTAGE - The present invention is useful in relatively dry environments, such as treating and **shaping** the cornea, and **dermatological** procedures involving surface tissue contraction of tissue underlying the surface of the skin for tissue rejuvenation, wrinkle removal and the like. The electrosurgical probe is designed to enhance the depth of the current penetration into the tissue at a voltage sufficiently low to minimize or completely avoid vaporization, necrosis or ablation of the tissue surface.

DESCRIPTION OF DRAWING(S) - The drawing shows a perspective view of an electrosurgical system incorporating a power supply and an electrosurgical probe for tissue contraction and vessel hemostasis.

Electrosurgical system (5)
Electrosurgical probe (20)
Power supply (10)
foot pedal (24)
Voltage level display (40)
pp; 79 DwgNo 1/33

40/5/23 (Item 23 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2006 The Thomson Corp. All rts. reserv.

012274898 **Image available**
WPI Acc No: 1999-081004/199907
XRPX Acc No: N99-058226

Method for treating dermatological tissue - involves using pulsed, filament lamp light source having reflector to direct predetermined amount of light energy from quartz filament lamp operating at wavelength of 700-1800 nanometres onto target tissue

Patent Assignee: COOLTOUCH CORP (COOL-N); FULLMER D J (FULL-I); HENNINGS D R (HENN-I); LASER AESTHETICS INC (LASE-N); SAND B J (SAND-I); NEW STAR LASERS INC (NEWS-N)
Inventor: FULLMER D J; HENNINGS D R; SAND B J
Number of Countries: 082 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9858592	A1	19981230	WO 98US13158	A	19980624	199907	B
US 5885274	A	19990323	US 97881539	A	19970624	199919	
AU 9881667	A	19990104	AU 9881667	A	19980624	199921	
US 5968034	A	19991019	US 97881539	A	19970624	199954	
			US 98103756	A	19980624		

EP 1018955 A1 20000719 EP 98931568 A 19980624 200036
WO 98US13158 A 19980624
AU 742982 B 20020117 AU 9881667 A 19980624 200219

Priority Applications (No Type Date): US 98103756 A 19980624; US 97881539 A 19970624
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
WO 9858592 A1 E 33 A61B-017/36
Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW
AU 9881667 A Based on patent WO 9858592
US 5968034 A 14 CIP of application US 97881539
CIP of patent US 5885274
EP 1018955 A1 E A61B-017/36 Based on patent WO 9858592
Designated States (Regional): DE ES FR GB IT
AU 742982 B A61B-017/36 Previous Publ. patent AU 9881667
Based on patent WO 9858592

Abstract (Basic): WO 9858592 A

The method involves using pulsed, filament lamp light source (100) having a strong output at a wavelength of 700-1800 nanometres and is suitably a tungsten quartz halogen lamp rated at 1000 watts and generating up to 27,500 lumens of flux during a filament size of about 6 mm wide and about 16 mm long. The lamp is cooled by a small fan (102) blowing cold air or other coolant across the lamp in a direction (104). A curved focusing element (106), such as a silvered mirror, is set on 1 side of the lamp and the output electromagnetic radiation is reflected through a collimating lens (108).

A typical lens is formed of 2 lenses (108a,108b) each with a diameter of about 1.75 inches. Optionally, the collimated electromagnetic energy (110) is transmitted through a converting filter (112) typically of ionically coloured glass and with a certain transmittance value depending on the wavelength of the incident light. A detecting meter (114) is placed to register the filtered light (116) from the filter.

USE - Modification of dermatological and other **collagen** -containing **tissue** using non- **laser** **infrared** light **energy** from pulsed incandescent filament lamp.

ADVANTAGE - Safe and economical **skin** **recontouring** and **thermal** destruction of hair follicles.

Dwg.1/5

40/5/24 (Item 24 from file: 350)
DIALOG(R)File 350:Derwent WPIX

011535965 **Image available**
WPI Acc No: 1997-512446/199747
XRPX Acc No: N97-426605
Laser collagen tissue shrinking method - involves using irradiation of target collagen with laser energy to increase its temperature and

induce thermal contraction of it
Patent Assignee: NEW STAR LASERS INC (NEWS-N)
Inventor: HENNINGS D; SAND B J
Number of Countries: 062 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9737723	A1	19971016	WO 97US3449	A	19970307	199747	B
AU 9723181	A	19971029	AU 9723181	A	19970307	199810	

Priority Applications (No Type Date): US 96631800 A 19960410
Cited Patents: US 4854320; US 4976709; US 5071417; US 5334191
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9737723	A1	E	33	A61N-005/06	
AU 9723181	A			A61N-005/06	Based on patent WO 9737723

Designated States (National): AM AT AU BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU JP KE KG KP KR KZ LK LR LT LU LV MD MG MN MW MX NO NZ PL PT RO RU SD SE SI SK TJ TT UA UZ VN
Designated States (Regional): AT BE CH DE DK ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG

Abstract (Basic): WO 9737723 A
The method removes wrinkles and shrinks target facial and body tissue by irradiation of the **collagen tissue** with a suitable type of **laser** energy. The method used matches the thickness of the target tissue with the depth of the spectral absorption coefficient of the specific laser wave length to gently heat the **collagen** molecule to the thermal shrinkage temperature.
This results in shrinkage of the underlying **tissue** while **tightening** the overlying **skin** . Superficial **heat** exchange either by means of passive, or more effectively, by means of a dynamic cooling process enhance this modality.
ADVANTAGE - The method eliminates pain or discomfort and reduces any risk of superficial destruction of the skin tissue.
Dwg.6/8

40/5/25 (Item 25 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009555849 **Image available**
WPI Acc No: 1993-249396/199331
XRPX Acc No: N93-192017
Controlled hyperthermia generating appts. for selected zone in tissue target region - has ultrasonic transducer driven by excitation signals and propagation elements for focusing and directing beam to control size and shape **of beam incident on target** tissue
Patent Assignee: SUMMIT TECHNOLOGY INC (SUMM-N)
Inventor: KLOPOTEK P J
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5230334	A	19930727	US 92823816	A	19920122	199331	B

Priority Applications (No Type Date): US 92823816 A 19920122
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5230334	A		7	A61N-005/00	

Abstract (Basic): US 5230334 A

The ultrasound generating system includes at least one ultrasound transducer, pref. driven by sinusoidal excitation signals in a continuous wave or quasi-continuous wave mode to generate ultrasound. The temp. in the heated zone is controlled by selecting the power, duration and frequency of the ultrasound.

The penetration of the ultrasound and therefore the depth and volume of the target zone is controlled by selecting the excitation frequencies to confine the absorption of the **ultrasound** beam in the target **tissue** . The system is used in inducing controlled **collagen** shrinkage in corneal **tissue** to effective thermokeratoplasty (**heat** induced modification of the shape of the cornea).

USE/ADVANTAGE - Producing controlled localised hyperthermia in selected heating zone using high frequency ultrasound for e.g. thermokeratoplasty, enables selection of various hyperthermia parameters e.g. selection of heating depth and desired temp of hyperthermia zone etc.

Dwg.1/5

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NPL Bibliographic Database Search – Medical Databases

Search Strategy

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Set     Items   Description
S1    2142767   ENERGY OR ENERGIES OR RADIOFREQUENC? OR RADIO()FREQUENC? OR
            ULTRASO? OR ULTRA()(SONIC? OR SOUND?) OR LASER? OR ELECTROMA-
           GNET? OR ELECTRO()MAGNET? OR INFRARED? OR THERMAL? OR HEAT???
S2    3887519   RESHAP? OR RECONTOUR? OR CONVEX? OR SHAPE? ? OR SHAPING? OR
            CONTOUR? OR MODEL???? OR REMODEL? OR REFORM? OR SCULPT? OR R-
           ESCULPT?
S3       5414   TIGHTEN?
S4    1703158   SKIN OR DERMIS OR DERMAL OR EPIDERM? OR DERMATOL? OR CUTAN-
           EOUS?
S5    4392232   ORGAN? ? OR TISSUE? ?
S6     353663   COLLAGEN?
S7    2319077   PRESSUR? OR PRESS OR PRESSE? ? OR PRESSING? OR FORCE? ? OR
           COMPRESS?
S8    2521708   CONTACT??? OR TOUCH??? OR APPLY? OR APPLIE? OR APPLICATION?
S9      81138   S1(5N)S7:S8
S10    247281   S2:S3(5N)S4:S5
S11     10187   S2:S3(5N)S6
S12      1484   S9 AND S10:S11
S13       581   S9(S)S10:S11
S14        16   S9 AND S10 AND S11
S15        11   RD  (unique items)
S16       202   S1 AND S10 AND S11
S17       151   S1(S)S10(S)S11
S18        87   S17 NOT (S14 OR PY=2003:2006)
S19        44   RD  (unique items)
S20     51174   S1(5N)S2:S3
S21     52616   S4(5N)S7:S8
S22         4   S20 AND S21 AND S11
S23         1   S22 NOT (S14 OR S18)
S24       565   S9(S)S10
S25       226   S9(10N)S10
S26       110   S9 AND S10 AND S6
S27        52   S9(S)S10(S)S6
S28        43   S27 NOT (S14 OR S18)
S29        26   RD  (unique items)
S30        30   S9 AND S11 AND S4:S5
S31        14   S30 NOT (S14 OR S18 OR S28)
S32        12   RD  (unique items)
S33       107   S1(5N)S2:S3(5N)S4 AND S6
S34        35   S33 NOT (S14 OR S18 OR S28 OR S31 OR PY=2003:2006)
S35        27   RD  (unique items)

File 155:MEDLINE(R) 1951-2006/Jun 08
         (c) format only 2006 Dialog
File  73:EMBASE 1974-2006/Jun 09
         (c) 2006 Elsevier Science B.V.
File   5:Biosis Previews(R) 1969-2006/Jun W1
         (c) 2006 The Thomson Corporation
File  91:MANTIS(TM) 1880-2006/Feb
         2006 (c) Action Potential
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File 164:Allied & Complementary Medicine 1984-2006/Jun
(c) 2006 BLHCIS

Search Results

15/5/5 (Item 5 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12805061 PMID: 10918287
In vivo experimental evaluation of skin remodeling **by using an Er:Glass** laser **with** contact **cooling.**
Mordon S; Capon A; Creusy C; Fleurisse L; Buys B; Faucheux M; Servell P
Inserm-EA2689-IFR 22, Lille University Hospital, Lille, France. mordon@lille.inserm.fr
Lasers in surgery and medicine (UNITED STATES) 2000, 27 (1) p1-9, ISSN 0196-8092--Print Journal Code: 8007168
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
BACKGROUND AND OBJECTIVE: Selective **dermal remodeling** consists of inducing **collagen tightening** , neocollagen synthesis, or both, without damage to the overlying epidermis. This experimental study aimed to evaluate an Er:Glass laser emitting at 1.54 micrometer combined with contact cooling to target the upper dermis while protecting the epidermis. STUDY DESIGN/MATERIALS AND METHODS: Male hairless rats were used for the study. Different fluences (26-30 J/cm(2)) by using single 3-ms pulse irradiation or pulse train irradiation (1.1 J, 3 Hz) and different cooling temperatures (+5 degrees C, 0 degrees C, -5 degrees C) were screened with clinical examination and histologic evaluation at 1, 3, and 7 days after laser irradiation. RESULTS: The clinical effects were clearly dose and temperature cooling dependent. It seemed that single pulse irradiation led to epidermal whitening in most cases, whatever the cooling temperature. Conversely, pulse train irradiation showed reproducible epidermal preservation and confinement of the thermal damage into the dermis. New collagen synthesis was confirmed by a marked fibroblastic proliferation, detected in the lower dermis at day 3 and clearly seen in the upper dermis at day 7. CONCLUSION: This new laser seems to be a promising new tool for the treatment of skin laxity, solar elastosis, facial rhytides, and mild reduction of wrinkles. Copyright 2000 Wiley-Liss, Inc.

15/5/6 (Item 6 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12262632 PMID: 11357294
Laser resurfacing: a safe and predictable method of skin resurfacing.
Lent W M; David L M
Institute of Laser and Cosmetic Surgery, Hermosa Beach, California, USA. warrenlen@aol.com

Journal of cutaneous laser therapy (England) Apr 1999, 1 (2) p87-94, ISSN 1462-883X--Print Journal Code: 100890790
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS

Skin resurfacing with lasers for skin restoration has been the most exciting advance in cosmetic surgery in the past 2 years. This method has effectively replaced chemical peel and dermabrasion as modes for skin rejuvenation, yet surprisingly, very little has been published on its effectiveness. Our aim is to delineate clear indications, methods and results of laser skin resurfacing. Laser resurfacing has evolved over the past 13 years and our current method has emerged from this experience. This method has been employed on 258 consecutive patients treated over the past 2 years. A total of 201 patients were treated for photodamaged skin, 53 for facial acne scarring and four for post-surgical scars. Each of these conditions has in common the pathological finding of **contour** irregularity of the involved abnormal **skin** . The CO2 Ultrapulse laser's advantage is the predictable ability to vaporize the upper layer of elevated **skin** , **tighten** **collagen** bundles and induce a local inflammatory reaction with epithelial proliferation. This paper presents a clear, concise, and conservatively oriented technique, including pre- and post-operative care of laser skin resurfacing. The technique presented is conceived to correct precisely the underlying pathological condition and can be used in conjunction with other cosmetic procedures. A total of 200 patients underwent full face resurfacing, 41 periorbital, 13 perioral and four for facial scars. Of the patients, 78% were female and 22% were male. The results of each patient were judged by an independent observer. Some 92% were found to have either an excellent or very good result; 2% were judged to be satisfactory; and 6% were from outside the region or were lost to follow-up. Minor complications included 12% transient post-inflammatory hyperpigmentation, 3% acute acne and 1% herpes type 1. There were no major complications, including hypertrophic scarring. A total of 15% required some type of secondary **touch** -up resurfacing. Our method of **laser** skin resurfacing offers a consistent method for dramatic improvement of facial skin quality for those patients with photodamage and acne scarring, while minimizing risk.

15/5/10 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0013789340 BIOSIS NO.: 200200382851
Method and apparatus for tightening skin **by controlled contraction of** collagen **tissue**
AUTHOR: Knowlton Edward W
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1259 (2): June 11, 2002 2002
MEDIUM: e-file
PATENT NUMBER: US 6405090 PATENT DATE GRANTED: June 11, 2002 20020611
PATENT CLASSIFICATION: 607-102 PATENT ASSIGNEE: Thermage, Inc., Hayward, CA, USA PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent

RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A method and apparatus for **tightening** a surface of a **skin** with an underlying collagen containing tissue **applies** radiant **energy** through the skin to underlying collagen tissue without substantially modifying melanocytes and other epithelial cells in the epidermis. A porous membrane is adapted to receive an electrolytic solution and become inflated to substantially conform a contacting exterior surface of the membrane to a skin layer. The membrane includes a cooling lumen for receiving cooling fluid. One or more thermal electrodes positioned in the membrane and transfers thermal energy to the electrolytic solution. The electrolytic solution and cooling fluid creates a reverse thermal gradient from the skin surface to the underlying collagen tissue. A thermal power source is coupled to the thermal electrodes, and a source of electrolytic solution is coupled to the membrane.

15/5/11 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0012589702 BIOSIS NO.: 200000308015
Method for modifying and reshaping collagen beneath the surface of skin
AUTHOR: Yavitz Edward Q (Reprint)
AUTHOR ADDRESS: 3828 Spring Creek Rd., Rockford, IL, 61114, USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1230 (1): Jan. 4, 2000 2000
MEDIUM: e-file
PATENT NUMBER: US 6009876 PATENT DATE GRANTED: January 04, 2000 20000104
PATENT CLASSIFICATION: 128-898 PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A cosmetic system and technique are provided for improving the texture and appearance of an individual's skin. The system includes an **energy** absorption modifier that may be **applied** to a portion of the individual's epidermis. The energy absorption modifier is designed to displace water within that portion. Energy from an appropriate laser or infrared lamp can then be directed to a treatment area beneath the epidermal layer without detrimental heat buildup in that area of the epidermis.

19/5/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13703886 PMID: 11952548
One-pass resurfacing with a combined-mode erbium: YAG/CO2 laser system: a study in 102 patients.
Trelles M A; Allones I; Luna R
Instituto Medico Vilafortuny/Antoni de Gimbernat Foundation, Av.

Vilafortuny 31, E-43850 Cambrils, Spain. imv@tinet.fut.es
British journal of dermatology (England) Mar 2002, 146 (3) p473-80, ISSN 0007-0963--Print Journal Code: 0004041
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
BACKGROUND: The CO2 and erbium: YAG (Er: YAG) lasers have been used for skin resurfacing. A recently developed system combines pulsed ablative Er: YAG and continuous wave subablative CO2 wavelengths in one console. OBJECTIVES: To assess the potential benefits of this system. METHODS: The study follows 102 women, skin types I-V, with 26 full face, 48 perioral and 28 periocular resurfacing procedures. The ablative Er: YAG pulse (350 micros, 29 J cm(-2)) is followed immediately by a non-ablative CO2 laser shot (4-6 W, 50 ms) through the same collimated handpiece (3-mm diameter spot), 50% overlapping, repetition rate 10 Hz, giving two-pass equivalence with one single pass. RESULTS: Patients scored the results as very good (n = 67), good (n = 25) and fair (n = 10). Mild but successfully resolved side-effects occurred in only four patients. The 2-month histology showed a good band of new **collagen tightening** the overlying healthy **epidermis** . Follow-up periods ranged from 1.5 to 2 years (mean +/- SD 1.76 +/- 0.33). CONCLUSIONS: This device at the above settings offers speedy resurfacing without compromising the quality of the procedure for the patient, and may well satisfy the basic requirements of **laser** skin resurfacing.

19/5/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13641038 PMID: 11860431
Short-term histologic effects of nonablative resurfacing: results with a dynamically cooled millisecond-domain 1320 nm Nd:YAG laser.
Fatemi Afschin; Weiss Margaret A; Weiss Robert A
Department of Dermatology, Katharinen-Hospital, Dusseldorf, Germany.
Dermatologic surgery - official publication for American Society for Dermatologic Surgery et al. (United States) Feb 2002, 28 (2) p172-6, ISSN 1076-0512--Print Journal Code: 9504371
Publishing Model Print
Document type: Evaluation Studies; Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
BACKGROUND: It is widely believed that nonablative laser techniques can lead to **dermal collagen remodeling** without the obvious **epidermal** injury and the wound created with ablative approaches. This occurs when dermal collagen injury is induced without visible injury to the overlying epidermis. OBJECTIVE: To examine the acute histologic effects both 1 hour and several days after standardized treatment protocols of dynamically cooled millisecond domain Nd:YAG 1320 nm **laser** to provide further insight into the mechanism of action of nonablative resurfacing. METHODS: Multiple adjacent sites on the preauricular area of the cheek of 10 patients were biopsied following one to three **laser** passes of dynamically cooled

millisecond-domain Nd:YAG 1320 nm **laser** . Biopsies were performed at 1 hour and at 3 days following a single treatment. The number of passes was varied from one to three and Tmax (peak temperature measured by integrated radiometer) during treatment was targeted for 45-48 degree C. RESULTS: At 1 hour after treatment, epidermal spongiosis and edema of the basal cell layer were present in all the specimens treated with three passes. At 3 days the three pass samples also showed microthrombosis, widened vessels, sclerosis of the vessel walls, and infiltration of neurophilic granulocytes. The occurrence of these histologic findings correlated well with the presence of clinical improvement (judged by photographs) at 8 weeks after treatment. Acute histologic changes and clinical improvement were not observed below treatment temperatures of Tmax 45 degree C or after one pass alone. Repeated temperatures above a Tmax of 48 degree C incurred risk of epidermal injury. CONCLUSION: Even though longer-term histologic findings have confirmed the collagen synthesis component of 1320 nm Nd:YAG **laser** , our data indicate that there may be some additional factors other than dermal collagen **heating** with subsequent collagen repair. The concept of true "nonablative resurfacing" may involve some form of subclinical epidermal injury that improves the clinical outcome. Acute changes involving superficial blood vessel injury with cytokine release may also be implicated. Our histologic findings suggest that three passes with fluence and cooling adjusted to a Tmax of 45 degree C-48 degree C yields improved clinical results.

19/5/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13256694 PMID: 11207681
Facial rejuvenation with a nonablative 1320 nm Nd:YAG laser: a preliminary clinical and histologic evaluation.
Trelles M A; Allones I; Luna R
Instituto Medico Vilafortuny, Antoni de Gimbernat Foundation, Cambrils, Spain.
Dermatologic surgery - official publication for American Society for Dermatologic Surgery et al. (United States) Feb 2001, 27 (2) p111-6, ISSN 1076-0512--Print Journal Code: 9504371
Publishing Model Print; Comment in Dermatol Surg. 2001 Aug;27(8) 781-2; Comment in PMID 11493309
Document type: Clinical Trial; Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
BACKGROUND: Rejuvenation of photoaged skin involves removal of the epidermis and superficial dermis, encouraging the production of new epidermis with collagenesis and remodeling. The facial appearance during healing is unpleasant, and the complication rate is high. OBJECTIVE: We evaluate a Q-switched Nd:YAG **laser** operating at 1320 nm, with a cryogen delivery system and a skin temperature sensor. The system cools the target skin, followed by the **laser** impulse which passes through the cooled epidermis into the dermis. METHODS: Ten patients are presented. Two treatments a week were given over 4 weeks, and the patients were seen at 2 and 6 weeks after the final treatment. RESULTS: The histology showed improvement in the condition of the dermis in all 10 patients, but only 2

of the 10 patients expressed satisfaction with the results, despite similar histologic findings. CONCLUSIONS: Careful patient selection is required. Better patient education is necessary to ensure that the patients' expectations are realistic. We should add treatments that will improve the youthful aspect of the epidermis. The system may well help in maintaining the effects of **collagen remodeling** following traditional ablative resurfacing procedures, but studies are necessary to show this.

19/5/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13039114 PMID: 11360318
New collagen formation after dermal remodeling with an intense pulsed light source.
Goldberg D J
Division of Dermatology, New Jersey Medical School, Newark, NJ, USA.
Journal of cutaneous laser therapy (England) Jun 2000, 2 (2) p59-61, ISSN 1462-883X--Print Journal Code: 100890790
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
BACKGROUND: Laser resurfacing in the treatment of facial rhytides has traditionally involved ablative methods with their associated complications and limitations. More recently, rhytid improvement and dermal remodeling has been seen with non-ablative approaches. Such laser-induced remodeling may be associated with evidence of new dermal collagen formation. OBJECTIVE: The aim of this study was to evaluate the histologic changes seen after dermal remodeling with a non-laser intense pulsed light source. METHODS: Five patients underwent four sessions of dermal remodeling with an intense pulsed light source. All patients received a pretreatment biopsy and a second biopsy 6 months after the final treatment. Biopsies were evaluated for histologic evidence of new collagen formation 6 months after the final treatment. RESULTS: All patients showed histologic evidence of new upper papillary **dermal collagen** formation. CONCLUSION: Dermal **remodeling** with an intense pulsed light source can lead to histologic evidence of new collagen formation with associated clinical improvement.

19/5/11 (Item 11 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12980212 PMID: 11126433
Collagen tightening induced by carbon dioxide laser versus erbium: YAG laser.
Fitzpatrick R E; Rostan E F; Marchell N
Department of Medicine, University of California at San Diego, USA. dadee7@cts.com
Lasers in surgery and medicine (United States) 2000, 27 (5) p395-403, ISSN 0196-8092--Print Journal Code: 8007168
Publishing Model Print
Document type: Journal Article

Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS

BACKGROUND AND OBJECTIVE: Pulsed CO2 laser resurfacing improves photodamage and acne scarring by ablation of abnormal **tissue** with subsequent regeneration and **remodeling** of **collagen** and through **heat** induced collagen contraction. Whether collagen contraction persists long-term and helps maintain the **skin tightening** observed after resurfacing is debated. One possible mechanism of long-term clinical tightening is that of wound contracture that occurs as part of normal wound healing. If normal wound contracture, and not **heat** induced collagen contraction, is responsible for maintaining the initial **skin tightening** seen in CO2 **laser** resurfacing, then equal results would be expected from resurfacing with either CO2 or erbium **lasers** . The study was performed to determine whether there is a difference in **skin tightening** secondary to **thermally** mediated **collagen** contraction versus that which occurs secondary to tissue contraction of wound healing. The persistence of these changes over 6 months and the histologic characteristics were studied as well. STUDY DESIGN/MATERIALS AND METHODS: Nine patients had four tattoo dots applied to the upper eyelids, with horizontal axis measuring 18-20 mm and the vertical axis 6-10 mm. One month later, one eyelid was treated with three passes of the UltraPulse CO2 **laser** and the other eyelid with an erbium **laser** to the end point of early pinpoint bleeding. Three patients were treated with additional passes after pinpoint bleeding was encountered. The total number of pulses used per patient was recorded. Measurements of the vertical and horizontal distances were made after each pass and monthly for 6 months. The treated skin was then excised in performance of an upper lid blepharoplasty and the tissue submitted for histologic analysis. RESULTS: In the vertical plane, the UltraPulse CO2 **laser** induced an average of 43% tightening intraoperatively and this gradually diminished to an average of 34% by 6 months, whereas the wound contracture of erbium resurfacing was not seen until 1 month postoperatively, at which time 42% tightening was seen, gradually diminishing to 36% at 6 months. Three patients with erbium resurfacing had scarring present. These were the three patients treated most aggressively and also the three patients with the most significant wound contracture. Scarring was not seen on the CO2 treated side in any patients. In the horizontal plane, the CO2 **laser** caused 31% intraoperative tightening, decreasing to 19% at 6 months. In this plane, the erbium **laser** induced wound contracture was 12% at 1 month which remained stable and unchanged. CONCLUSIONS: Although wound contraction secondary to tissue healing may result in nearly the same **tissue tightening** as **heat** -induced **collagen** contraction, the two processes are very different and variable, with increased risk of scarring seen with wound contracture, compared with **heat** -induced **collagen tightening** . The **tissue tightening** seen with **thermally** induced **collagen** contraction is long-lasting, if not "permanent."

19/5/12 (Item 12 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12913264 PMID: 11050492
Full-face nonablative dermal remodeling with a 1320 nm Nd:YAG laser.
Goldberg D J

Division of Dermatology, New Jersey Medical School, Newark, New Jersey, USA.

Dermatologic surgery - official publication for American Society for Dermatologic Surgery et al. (UNITED STATES) Oct 2000, 26 (10) p915-8, ISSN 1076-0512--Print Journal Code: 9504371

Publishing Model Print; Comment in Dermatol Surg. 2001 Aug;27(8) 781-2; Comment in PMID 11493309

Document type: Clinical Trial; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

Subfile: INDEX MEDICUS

BACKGROUND: Full-face laser-induced dermal remodeling has traditionally involved ablative methods with their associated complications and limitations. Rhytide improvement requires, among other things, **dermal collagen remodeling** . Such **remodeling** has been shown to occur without the requirement of epidermal ablation. OBJECTIVE: To evaluate the investigator's objective and patient's subjective improvement seen after full-face treatment with a 1320 nm Nd:YAG **laser** . METHODS: Ten patients with class I-II rhytides and Fitzpatrick skin types I-II were treated five times over 3-4 week intervals with a 1320 nm Nd:YAG **laser** . Patients were evaluated for degree of clinical improvement 6 months after their final treatment. RESULTS: All 10 subjects reported subjective improvement in the quality of their skin. Only six subjects were felt by the investigator to show definitive clinical improvement. Six-month posttreatment biopsies showed evidence of new collagen formation. CONCLUSION: Irradiation with 1320 nm Nd:YAG **laser** can lead to new collagen formation and associated clinical improvement. Such full-face improvement can occur without epidermal ablation.

19/5/15 (Item 15 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

12620685 PMID: 10685092

Nonablative treatment of rhytids with intense pulsed light.

Goldberg D J; Cutler K B

Division of Dermatology, New Jersey Medical School, Newark, New Jersey 07103, USA.

Lasers in surgery and medicine (UNITED STATES) 2000, 26 (2) p196-200, ISSN 0196-8092--Print Journal Code: 8007168

Publishing Model Print

Document type: Clinical Trial; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

Subfile: INDEX MEDICUS

BACKGROUND AND OBJECTIVE: The aim of this study was to evaluate the efficacy and complication rate of a nonablative nonlaser light source in the treatment of rhytids. Laser resurfacing, in the treatment of facial rhytids, has involved ablative methods, with their associated complications and limitations. Rhytid improvement requires **dermal collagen remodeling** . Interest has begun to focus on the use of wavelengths that preserve the epidermis but deliver enough **energy** to promote rhytid improvement. STUDY DESIGN/MATERIALS AND METHODS: Thirty subjects with class I-II rhytids and Fitzpatrick skin types I-II were treated with up to four

treatments with an intense pulsed light source. Subjects were evaluated 6 months after the final treatment. RESULTS: Twenty-five subjects showed some improvement in the quality of skin. No subjects were found to have total resolution of rhytids. CONCLUSION: Nonlaser intense pulsed light may effectively improve some facial rhytids. Such improvement can occur without epidermal ablation. Copyright 2000 Wiley-Liss, Inc.

19/5/16 (Item 16 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12547892 PMID: 10495300
Pulsed dye laser therapy for sun damaged skin.
Zelickson B D; Kilmer S L; Bernstein E; Chotzen V A; Dock J; Mehregan D; Coles C
University of Minnesota, Skin Specialists Inc., Abbott Northwestern Hospital Laser Center, Minneapolis, Minnesota 55414, USA.
Lasers in surgery and medicine (UNITED STATES) 1999, 25 (3) p229-36 , ISSN 0196-8092--Print Journal Code: 8007168
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
OBJECTIVE: The objective of this study was to evaluate the effectiveness of the pulsed dye laser (585 nm, 450 ms) in the treatment of sun induced wrinkles. DESIGN: Patients had one pulsed dye laser (585 nm) treatment. The treated areas were assessed by the following methods: grading of skin wrinkles at 6 weeks, 12 weeks, and 6-14 months after treatment by blinded observers and by light and electron microscopy. SETTING: An ambulatory care center at Abbott Northwestern Hospital (ANH) and the Laser & Skin Surgery Center of Northern California (LSSCNC). PATIENTS: Twenty patients were treated, half with mild to moderate and half with moderate to severe sun induced skin wrinkles. RESULTS: At last follow up 90% (9/10) of the mild to moderate wrinkles and 40% (4/10) of the treated patients with moderate to severe wrinkles had clinically observable improvement in their sun induced skin wrinkles. Histologic examinations of the treated areas showed a superficial dermal band of well organized elastin and collagen fibers replacing pre-treatment elastic tissue. Increased cellularity and mucin deposition was consistent with **dermal collagen remodeling** . Copyright 1999 Wiley-Liss, Inc.

19/5/17 (Item 17 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12351407 PMID: 10193961
Long-term effects of one general pass laser resurfacing. A look at dermal tightening and skin quality.
Ruiz-Esparza J; Barba Gomez J M
Department of Dermatology, University of California, San Diego, USA.
Dermatologic surgery - official publication for American Society for Dermatologic Surgery et al. (UNITED STATES) Mar 1999, 25 (3) p169-73; discusion 174, ISSN 1076-0512--Print Journal Code: 9504371

Publishing Model Print
Document type: Clinical Trial; Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS

BACKGROUND: Laser resurfacing with high-energy, short-pulsed lasers is generally a safe and cosmetically rewarding procedure. Nevertheless, the aggressive use of these instruments has the potential for unpredictable, undesirable complications. It has long been held that multiple passes are needed to achieve **dermal tightening** (**collagen** shrinkage), which will result in a cosmetically desirable appearance. The observation of **skin tightening** after one general pass has not been previously reported. OBJECTIVE: To look at the long-term results after only one general pass and of focal multiple passes over lines, with particular attention to the degree of **tightening** and quality of the **skin** . METHODS: Fifteen patients with varying degrees of photodamage and resulting skin laxity, and with at least eighteen months follow-up, were evaluated. High quality photographic records were compared between pre- and postoperative pictures at three different angles on each. RESULTS: Cosmetically significant **dermal tightening** was observed in all of these patients. This was noted in some patients after six months and continued for several months after. All patients were pleased with the cosmetic improvement obtained. Of note were fast healing and the absence of significant complications in these patients. CONCLUSIONS: The appearance of **dermal tightening** as a late occurrence in the postoperative course after one single general pass has not been previously reported. When numerous general passes are done, **dermal tightening** is quite impressive and appears much sooner; however, much of this result is due to edema and the resulting skin quality in these patients is different. A more natural look is achieved if only one pass is done. The procedure is safer and has a faster recovery period.

19/5/18 (Item 18 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12262648 PMID: 11360411
Non-ablative subsurface remodeling: clinical and histologic evaluation of a 1320-nm Nd:YAG laser.
Goldberg D J
Division of Dermatology, New Jersey Medical School, Newark, New Jersey, USA.
Journal of cutaneous laser therapy (England) Sep 1999, 1 (3) p153-7, ISSN 1462-883X--Print Journal Code: 100890790
Publishing Model Print
Document type: Clinical Trial; Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS

BACKGROUND: Laser resurfacing in the treatment of facial rhytids has traditionally involved ablative methods with their associated complications and limitations. Rhytid improval requires **dermal collagen remodeling** . **Dermal remodeling** can occur without **epidermal** ablation. OBJECTIVE: The aim of this study was to evaluate the clinical and histologic changes occurring after treatment with a 1320-nm Nd:YAG **laser** . METHODS: Ten

subjects with class I-III rhytids and Fitzpatrick skin types I-II were treated four times with a 1320-nm Nd:YAG **laser** . Subjects were evaluated for degree of clinical improvement and histologic evidence of new collagen formation six months after their final treatment. RESULTS: Eight subjects showed subjective improvement in the quality of their skin. All ten subjects showed histologic evidence of new upper papillary dermal collagen formation. CONCLUSION: 1320-nm Nd:YAG **laser** irradiation can lead to new collagen formation and associated clinical improvement. Such improvement can occur without epidermal ablation.

19/5/19 (Item 19 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12205662 PMID: 10633258
Remodeling of a collagenous tissue at fixed lengths.
Humphrey J D
Biomedical Engineering Program, Texas A&M University College Station 77843-3120, USA.
Journal of biomechanical engineering (UNITED STATES) Dec 1999, 121 (6) p591-7, ISSN 0148-0731--Print Journal Code: 7909584
Contract/Grant No.: HL-054957; HL; NHLBI; HL-46367; HL; NHLBI
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
Mature tissues can often adapt to changes in their chemical, mechanical, or thermal environment. For example, in response to sustained increases or decreases in mechanical loads, some tissues grow and remodel so as to restore the stress or strain to its homeostatic state. Whereas most previous work addresses gross descriptors of tissue growth, this paper introduces a possible cell-mediated mechanism by which remodeling may occur in a soft connective tissue--that the kinetics of collagen deposition and degradation is similar regardless of the configuration of the body at which it occurs. The proposed theoretical framework applies to three-dimensional settings, but it is illustrated by focusing on the **remodeling** of a uniaxial **collagenous tissue** that is maintained at a fixed length for an extended period. It is shown that qualitative features expected of such remodeling (e.g., an increased compliance and increased stress-free length when remodeling occurs at an extended length) are easily realized. Growth and remodeling are complex phenomena, however, and are likely accomplished via multiple complementary mechanisms. There is a need, therefore, to identify other candidate mechanisms and, of course, to collect experimental data suitable for testing and refining the possible theories.

19/5/37 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

11478403 EMBASE No: 2002047711
Laser skin resurfacing
Koch R.J.
Dr. R.J. Koch, Division of Otolaryngology, Edwards Building, Stanford

University Medical Center, Stanford, CA 94305-5328 United States
Otolaryngologic Clinics of North America (OTOLARYNGOL. CLIN. NORTH AM.) (United States) 2002, 35/1 (119-133)
CODEN: OCNAB ISSN: 0030-6665
DOCUMENT TYPE: Journal ; Review
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 6

There are proponents of the pulsed COSUB2 and of the Er:YAG for the optimal **laser** for LSR. Patients who undergo pulsed COSUB2 resurfacing may take 7 or more days to heal, and have erythema for up to 3 to 4 months. Despite this, most patients have excellent results in terms of **skin tightening** and resolution of rhytids. Koch et al recently presented data using a Cutometer to measure skin elasticity changes associated with the COSUB2 **laser** . There was an overall 18.2% increase in skin elasticity following pulsed COSUB2 LSR, including a 22% increase in periorbital skin elasticity. They concluded that skin resurfacing with the pulsed COSUB2 **laser** does produce a true **skin - tightening** effect. The **thermal** injury caused by the COSUB2 **laser** may be implicated as causing prolonged healing and improved results. When the Er:YAG **laser** is used, patients tend to heal in 4 to 5 days, and usually experience short-lived erythema. They do have less satisfying rhytid resolution and **skin tightening** , however. The sequential use of these **lasers** , pulsed COSUB2 followed by Er:YAG, may be optimal. Wound healing with this combination treatment is rapid, usually within 4 days (like Er:YAG alone), whereas patient satisfaction with **skin** rejuvenation, rhytid removal, and **tightening** is high (like COSUB2 alone). The author does not advocate the purchase of an Er:YAG **laser** solely to remove COSUB2-injured tissue; however, it is a valuable technique if one has access to both **lasers** . The Derma K yields a similar healing and results profile, yet more study must be performed to determine the optimal continuous-wave COSUB2 settings. The clinical effects of LSR, primarily believed to be a result of **heat** -induced immediate **collagen tightening** and initiation of a wound healing response to injury, may result, in part, from cytokine secretion at the cellular level. Nowak et al evaluated the effect of pulsed COSUB2 **laser energy** on keloid and normal dermal fibroblast secretion of growth factors in an in vitro model. At a fluence of 4.7 J/cmSUP2 (commonly used in LSR), secretion of basic fibroblast growth factor (bFGF) was stimulated and that of transforming growth factor-beta1 (TGF-beta1) was inhibited in keloid-producing and normal dermal fibroblasts. The known ability of bFGF to promote organized collagen bundles may account for the observed clinical and histologic effects seen with LSR. The inhibition of TGF-beta1, which causes tissue fibrosis, also may play a protective role in minimizing scar production during the healing process. The **laser** can be thought of as a biostimulator that initiates a wound healing response. Research into precisely controlling the wound healing response with different sources of biostimulation will change the way skin surgery is performed. The specialty currently has excellent ablative **lasers** at its disposal. Microdermabrasion units, which use crystals to abrade the skin, recently have become popular; however, their effects are superficial and primarily are aimed at the epidermis only. The future of skin rejuvenation most likely will lie with the use of nonablative technologies to **tighten** the **dermis** without peeling the surface. These devices may be used alone for a true minimally invasive treatment or in combination with ablative **lasers** , if there is associated sun damage.

19/5/38 (Item 3 from file: 73)
DIALOG(R)File 73:EMBASE

10550727 EMBASE No: 2000015784
Prolonged clinical and histologic effects from COinf 2 laser resurfacing of atrophic acne scars
Walia S.; Alster T.S.
Dr. T.S. Alster, 2311 M St. NW, Washington, DC 20037 United States
AUTHOR EMAIL: talster@skinlaser.com
Dermatologic Surgery (DERMATOL. SURG.) (United States) 1999, 25/12 (926-930)
CODEN: DESUF ISSN: 1076-0512
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 14

BACKGROUND. The recent development of high- **energy** pulsed COinf 2 **lasers** that minimize **thermal** injury to uninvolved adjacent structures has revolutionized the manner in which atrophic facial scars are recontoured. Significant improvement of atrophic scars with **laser** resurfacing has clearly been demonstrated; however, the exact timing for assessment of skin for further treatment has varied due to the unknown amount of time needed after **laser** scar resurfacing to effect maximal **collagen** formation and **remodeling** . OBJECTIVE. The aim of this study was to determine the immediate and long-term (12-18 months) histologic and clinical effects of atrophic acne scars after COinf 2 **laser** resurfacing in order to provide physician guidelines for postoperative clinical assessment for retreatment. METHODS. Sixty patients (50 women, 10 men, mean age 38 years, skin types I-V) with moderate to severe atrophic facial scars were evaluated. Nineteen patients received regional cheek treatment and 41 patients received full-face resurfacing with a high- **energy** pulsed COinf 2 **laser** . Independent clinical assessments of treated scars were performed at 1, 6, 12, and 18 months and blinded histologic analyses were made of skin biopsies immediately prior to and after **laser** resurfacing, and at 1, 6, 12, and 18 months postoperatively in six patients. RESULTS. Significant immediate and prolonged clinical improvement in skin tone, texture, and appearance of COinf 2 **laser** -irradiated scars was seen in all patients. Average clinical improvement scores were 2.22 (69%) at 1 month, 2.1 (67%) at 6 months, 2.37 (73%) at 12 months, and 2.5 (75%) at 18 months. Continued **collagenesis** and subsequent **dermal remodeling** were observed on histologic examination of biopsied tissue up to 18 months after surgery. CONCLUSION. Continued clinical improvement was observed as long as 18 months after COinf 2 **laser** resurfacing of atrophic scars, with an 11% increase in improvement observed between 6 and 18 months postoperatively. We propose that a longer postoperative interval (12-18 months) prior to assessment for re- treatment be advocated in order to permit optimal tissue recovery and an opportunity for **collagen remodeling**.
?

29/5/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13380963 PMID: 11553168

Nonablative remodeling: clinical, histologic, ultrasound imaging, and profilometric evaluation of a 1540 nm Er:glass laser.

Fournier N; Dahan S; Barneon G; Diridollou S; Lagarde J M; Gall Y; Mordon S

Center Commercial La Croisee, Clapiers, France.

Dermatologic surgery - official publication for American Society for Dermatologic Surgery et al. (United States) Sep 2001, 27 (9) p799-806, ISSN 1076-0512--Print Journal Code: 9504371

Publishing Model Print

Document type: Evaluation Studies; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

Subfile: INDEX MEDICUS

BACKGROUND: Nonablative remodeling has been recently proposed as an alternative to CO2 and Er:YAG resurfacing. OBJECTIVE: To evaluate the efficacy and safety of a 1540 nm Er:glass laser with contact cooling in nonablative skin remodeling, focused on perioral and periorbital rhytides. METHODS: Sixty patients (mean age 47 years), Fitzpatrick skin types I-IV were treated four times over 6-week intervals. Patients were evaluated using digital photographs, histology, ultrasound imaging, and profilometry with silicone imprints in order to quantitate the degree of clinical improvement. RESULTS: All subjects reported subjective improvement in the quality and visual aspect of their skin. This was confirmed by a 40.2% reduction of anisotropy (P <.001) 6 weeks after the fourth treatment. Ultrasound imaging demonstrated a 17% increase of dermis thickness (P <.005). Biopsy specimens showed evidence of new **collagen** formation. CONCLUSION: This study has clearly demonstrated that irradiation with 1540 nm Er:glass laser can lead to new **collagen** formation, dermis thickening, reduction of anisotropy of the skin, and clinical improvements. The lack of adverse effects confirmed that this 1540 nm laser emitting in a pulsed mode coupled with an efficient cooling system is safe.

29/5/17 (Item 2 from file: 73)

11788685 EMBASE No: 2002362039

Non-ablative cutaneous remodeling with a 1.45 mum mid-infrared diode laser: Phase II

Hardaway C.A.; Ross E.V.; Paithankar D.Y.

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Journal of Cosmetic and Laser Therapy (J. COSMET. LASER THER.) (United Kingdom) 2002, 4/1 (9-14)

CODEN: JCLTC ISSN: 1476-4172

DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 14

BACKGROUND: Presented here is phase II of a three-part study of non-ablative **cutaneous remodeling** with a 1.45 mum diode laser configured with cryogen spray cooling. In phase I, safe heating and cooling parameters were established by examining gross and microscopic changes induced by the laser. Phase II examines clinical changes and side effects

in the treatment of single facial rhytids. METHODS: Two men and seven women with Fitzpatrick skin phototypes I-III were treated. Single facial rhytids were treated on three separate occasions 3 weeks apart (six periorbital and three perioral). Single, control wrinkles on the contralateral sides were treated with cryogen spray cooling alone. Subjects were treated with single passes with a 5 mm spot for the first two treatments. Owing to a modification in the handpiece design, a 4mm spot was used for the third and final treatment. The average power was 12W. At each treatment visit, heating times ranged from 200 ms to 300 ms, **applied** as a series of **heating** /cooling cycles. One treatment 'cycle' lasted for 100 ms and consisted of continuous laser heating interspersed with programmable parallel cryogen spray cooling bursts. RESULTS: Patients were assessed 1 day, 1 week, 4 months, and 6 months after treatment. Treatments were well tolerated, and no patient required pain control pre or post operatively. Mild erythema and edema were noted immediately after treatment and typically cleared within 2-3 days. Superficial, branny hyperpigmentation occurred in six patients at both treatment and control sides. This discoloration resolved within 1 week of treatment and left no residual pigment alterations. No whitening or residual scarring occurred. Rhytid scores improved from a baseline score of 2.3 to 1.8 at 6 months after treatment ($p>0.05$). Patient acceptance of the treatment was high, but most felt that there was little improvement of the treated rhytids. CONCLUSION: Although the 1.45 mum diode laser is capable of targeting dermal **collagen** and stimulating fibrosis at depths where solar elastosis resides, clinical improvement of rhytids was mild and did not correlate well with the degree of histologic changes noted in phase I.

29/5/22 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0013313093 BIOSIS NO.: 200100484932
Systems and methods for shrinking collagen in the dermis
AUTHOR: Utely David (Reprint); Edwards Stuart; Goode Richard
AUTHOR ADDRESS: San Carlos, CA, USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1249 (3): Aug. 21, 2001 2001
MEDIUM: e-file
PATENT NUMBER: US 6277116 PATENT DATE GRANTED: August 21, 2001 20010821
PATENT CLASSIFICATION: 606-42 PATENT ASSIGNEE: VidaDerm PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The invention provides a system and method for achieving the cosmetically beneficial effects of shrinking collagen tissue in the dermis in an effective, non-invasive manner, which leaves the outer layer of skin intact and undamaged. One embodiment of the invention provides electromagnetic energy to the skin of a patient. The device includes a carrier and an array of electrodes on the carrier. A microporous pad on the carrier overlies the array of electrodes, forming an interior chamber to contain an electrically conductive material. The microporous pad is adapted to contact a patient's skin and ionically transport the applied electromagnetic energy to ohmically heat dermal tissue beneath the

epidermal **skin** region. The **shape** of the carrier may differ to match different skin topographies and the electrodes may be sized to extend into tissue to heat a dermal skin region.
?

32/5/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11552613 PMID: 9393039
Laser resurfacing of the face.
VanderKam V M; Achauer B M
Division of Plastic Surgery, University of California Irvine Medical Center, Orange, USA.
Plastic surgical nursing - official journal of the American Society of Plastic and Reconstructive Surgical Nurses (UNITED STATES) Fall 1997, 17 (3) p134-7, ISSN 0741-5206--Print Journal Code: 8403490
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: NURSING
Pulsed mode carbon dioxide laser allows precise ablation of fine facial **tissue** while minimizing thermal damage to the **skin** . Changes in the structure of **dermal** **collagen** may account for the overall **tightening** effect observed. Preoperative preparation of the **skin** is important to prevent postoperative pigment changes. Prophylactic antivirals are used to reduce the risk of Herpes infection. The carbon dioxide **laser** produces pain when **applied** to the **skin** and various anesthetic techniques may be used. After lasing, the face can be dressed with occlusive dressings or left open. Sunscreens are required after reepithelization.

32/5/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

07073319 PMID: 3090157
Cutaneous tissue **repair following CO2 laser irradiation**.
Kamat B R; Carney J M; Arndt K A; Stern R S; Rosen S
Journal of investigative dermatology (UNITED STATES) Aug 1986, 87 (2) p268-71, ISSN 0022-202X--Print Journal Code: 0426720
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
We studied the mechanism of repair following exposure of normal **skin** to the CO2 laser in a focused mode. Exposed areas were biopsied at 0, 24, 48 h; 1, 2 weeks; 1, 2 1/2 months (pulse width varying from 0.1 to 1.0 s) after irradiation. The initial pattern was a V- **shaped** zone of cauterized **collagen** with a central crevice, the depth of which correlated with the total **energy** **applied** . The **epidermal** changes consisted of transepidermal cauterization and basal vacuolar changes lateral to the site

of impact. Over a period of 1 week, the wound crevice decreased in depth and width and the central margins of the zone of cauterized collagen approximated. The cauterized collagen was extruded and was noted in the **epidermal** crust; minimal granulation **tissue** was present. Biopsies at later time periods showed formation of granulation **tissue** and retention of small amounts of necrotic collagen; the process of collagen extrusion was largely prevented by suturing. These observations show that **dermal** contraction and necrotic collagen extrusion are important components of initial **tissue** repair following limited **dermal** destruction produced by CO2 irradiation.

32/5/8 (Item 4 from file: 73)
DIALOG(R)File 73:EMBASE
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01706753 EMBASE No: 1980075027
The role of ultrasound-induced cavitation in the 'in vitro' stimulation of collagen synthesis in human fibroblasts
Webster D.F.; Harvey W.; Dyson M.; Pond J.B.
Dept. Med., Guy's Hosp. Med. Sch., London SE1 9RT United Kingdom
Ultrasonics (ULTRASONICS) (United Kingdom) 1980, 18/1 (33-37)
CODEN: ULTRA
DOCUMENT TYPE: Journal
LANGUAGE: ENGLISH

Collagen synthesis by human embryonic fibroblasts in vitro was estimated using a collagenase-sensitivity assay. Collagen synthesis was stimulated by irradiation with ultrasound at a frequency of 3 MHz, a space-time peak intensity of 0.5 Wcmsup -sup 2, pulsed at a mark-space ratio of 2:8 ms for 5 min at ambient pressure. This stimulation was suppressed by the application of a positive pressure of 2 atmospheres during irradiation of the cells. Increasing the **pressure** in the absence of **ultrasound** had no effect on the rate of collagen synthesis in control cells. This stimulation, therefore, appears to be due to ultrasound-induced cavitation, since it is unlikely that increasing the **pressure** could modify any other **ultrasonic** parameter. Collagen synthesis is apparently stimulated to the same extent as general protein synthesis.

32/5/10 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)
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0013820029 BIOSIS NO.: 200200413540
Treating body tissue by applying energy and substances
AUTHOR: Edwards Stuart D (Reprint)
AUTHOR ADDRESS: 658 Westridge Dr., Portola Valley, CA, 94028, USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1259 (4): June 25, 2002 2002
MEDIUM: e-file
PATENT NUMBER: US 6409723 PATENT DATE GRANTED: June 25, 2002 20020625
PATENT CLASSIFICATION: 606-41 PATENT ASSIGNEE: Edwards; Stuart D., Portola Valley, CA, USA PATENT COUNTRY: USA
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: A method and apparatus for treatment for body structures, especially internal body structures involving disorders involving unwanted features or other disorders, that does not require relatively invasive surgery, and is not subject to other drawbacks noted with regard to the known art. A relatively minimally invasive catheter is inserted into the body, treatment of the body structures is applied using the catheter, and the unwanted features or disorders are relatively cured using the applied treatments. The applied treatments can include application of **energy** or substances, including **application** of **energy** (such as of **radio frequency** energy, microwave energy, or laser or other electromagnetic energy) or substances (such as **collagen** or other bulking, plumping, or **shaping** agents; saline or other energy-receiving electrolytes; astringents or other debulking, reducing, or shaping agents; antibiotics or other bioactive, chemoactive, or radioactive compounds). More than one applied treatment can be performed, either in conjunction, in parallel, or seriatim, so as to achieve a combined effect more substantial than any one individual such applied treatment.
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35/5/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13803741 PMID: 12079630
Non-ablative cutaneous remodeling **with a 1.45 microm mid-** infrared **diode** laser : **phase I.**
Hardaway Christina A; Ross E Victor; Barnette David J; Paithankar Dilip Y
Department of Dermatology, Naval Medical Center San Diego, San Diego, CA 92134, USA.
Journal of cosmetic and laser therapy - official publication of the European Society for Laser Dermatology (England) Mar 2002, 4 (1) p3-8, ISSN 1476-4172--Print Journal Code: 101136419
Publishing Model Print
Document type: Clinical Trial; Journal Article; Randomized Controlled Trial
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
BACKGROUND: Presented here is phase I of a three-part study of non-ablative **cutaneous remodeling** with a 1.45 microm diode **laser** configured with a cryogen spray cooling device. METHODS: Eight men and two women (average age of 67 years) with Fitzpatrick skin phototypes I-IV were treated at postauricular sites. Treatment consisted of one or two passes with a 4mm spot and an average power of 12 W. Heating times ranged from 150 ms to 500 ms applied over two to six treatment cycles. One treatment 'cycle' lasted for 100 ms and consisted of programmable parallel cryogen spray cooling pulses interspersed with unopposed heating. Biopsies were obtained at baseline, immediately after treatment, and at 2 months. RESULTS: Patients were assessed 1 day, 1 week, 1 month and 2 months after treatment. Treatments were well tolerated with minimal pain, with a trend towards increasing discomfort with longer heating times. Erythema and edema were also mild and short-lived. There was a direct relationship between the degree of erythema and edema, and longer unopposed heating times. Mild

hyperpigmentation occurred at only three treatment sites. Epidermal burns usually presented as immediate whitening in 11 of 60 one-pass sites and four of 16 two-pass sites. Whitening was associated with longer unopposed heating times. Atrophic, pitted scars occurred at two single-pass sites and three double-pass sites. Baseline biopsies demonstrated solar elastosis in a 375 microm thick band (mean range from 100 microm to 480 microm deep in the dermis). Immediate post-treatment biopsies demonstrated thermal damage in a 333 microm thick band (mean range from 311 microm to 644 microm deep in the dermis). Finally, dermal fibrosis was observed 2 months after treatment in a 272 microm thick band (mean range from 148 microm to 420 microm deep in the dermis). CONCLUSION: The 1.45 microm diode laser is capable of targeting dermal **collagen** and stimulating fibrosis at depths where solar elastosis resides. Longer unopposed heating times corresponded to increased erythema, edema, and pain, which were typically mild and short-lived. Epidermal burns can result in pitted scars.

35/5/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13565422 PMID: 12006190
A pilot investigation to subjectively measure treatment effect and side-effect profile of non-ablative skin remodeling using a 532 nm, 2 ms pulse-duration laser.
Bernstein E F; Ferreira M; Anderson D
Laser Surgery and Cosmetic Dermatology Centers, Marlton, NJ, USA. dermguy@hotmail.com
Journal of cosmetic and laser therapy - official publication of the European Society for Laser Dermatology (England) Sep 2001, 3 (3) p137-41, ISSN 1476-4172--Print Journal Code: 101136419
Publishing Model Print
Document type: Clinical Trial; Journal Article; Randomized Controlled Trial
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS
BACKGROUND AND OBJECTIVE: Carbon dioxide laser skin resurfacing has become a standard treatment for wrinkles and sun-damaged skin. This ablative treatment, however, is associated with undesirable complications and long recovery times. A growing body of evidence suggests that dermal inflammation and subsequent **collagen** formation can be stimulated without removal of the epidermis, raising the possibility of effective non-ablative skin remodeling for mild to moderately photodamaged skin. MATERIALS AND METHODS: This preliminary study was performed to evaluate the safety and subject satisfaction of non-ablative skin remodeling using a 532 nm, 2 ms pulse-duration, frequency-doubled Nd:YAG laser. Subjects with mild-to-deep lip wrinkles and mild-moderate acne scarring were treated one half of their lip (wrinkles) or cheek (acne scarring), leaving the other side as an untreated control. Subjects were treated at 3-6 week intervals for an average of three treatments. Subjective assessment of improvement was estimated by subject self-evaluation of the percentage improvement over baseline, and a blinded observer attempted to identify the treated side on physical examination.RESULTS: Subjective assessment revealed an average improvement of 51.4% and 53.6% for upper lip wrinkles and facial acne scarring, respectively. Side effects were limited to transient erythema

that resolved over 0.25-2 hours following treatment.CONCLUSIONS: These results demonstrate that non-ablative treatment with the 532 nm, 2 ms pulse-duration Nd:YAG laser results in subjective improvement of rhytides and acne scarring, with a high safety profile.

35/5/9 (Item 9 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11898882 PMID: 9727458
Skin tightening effects of the ultrapulse CO2 laser.
Seckel B R; Younai S; Wang K K
Department of Plastic and Reconstructive Surgery, Lahey Clinic Medical Center, Burlington, Mass, 01805 USA.
Plastic and reconstructive surgery (UNITED STATES) Sep 1998, 102 (3) p872-7, ISSN 0032-1052--Print Journal Code: 1306050
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: AIM; INDEX MEDICUS
This study analyzed the **skin tightening** or contracture effect of the Ultrapulse carbon dioxide (CO2) **laser** on the skin of hairless guinea pigs by light and electron microscopic, histologic, and tensiometric evaluations. Two 2 X 2 cm squares of back skin were precision tattooed on each of the animals in the study (n = 12). One square served as the control, and the other square was used as experimental skin. The experimental skin was treated with three passes of the CO2 laser at 500 mJ and 5 W using a 3-mm collimated hand-piece. Skin specimens from three animals were analyzed at 1, 4, 8, and 12 weeks. After three passes, the length of the square was reduced by 27 percent, and the width was reduced by 40 percent. Over the next 12 weeks, as the animals grew, the dimensions of the control areas also increased. The laser-treated areas continued to maintain their contracted dimensions, however. By the 12th week, the laser-treated areas were 28.35 percent shorter in length and 15.5 percent shorter in width than the control areas. Histologic examination demonstrated a significantly higher content of **collagen** in the reticular layer, which was more compact than that of the normal skin. Electron microscopy revealed that the laser had induced shortening of the **collagen** fibers (7.45 percent; p = 0.026), which persisted beyond the 12th week. Laser treatment did not significantly alter the tensile strength of the skin, although, at the 8th week, the treated areas had a slightly higher tensile strength.

35/5/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11677088 PMID: 9464286
Collagen shrinkage (selective dermaplasty) with the high-energy pulsed carbon dioxide laser.
Fulton J E; Barnes T
Fulton Skin Institute, Newport Beach, California 92660, USA.
Dermatologic surgery - official publication for American Society for

Dermatologic Surgery et al. (UNITED STATES) Jan 1998, 24 (1) p37-41,
ISSN 1076-0512--Print Journal Code: 9504371
Publishing Model Print
Document type: Case Reports; Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS

BACKGROUND: The high-energy pulsed carbon dioxide (CO2) laser has proven useful for skin resurfacing. The modality can be less penetrating than chemical peels and more accurate than dermabrasion. OBJECTIVE: To demonstrate the additional benefit of dermal remodeling (selective dermaplasty) of skin lesions, scars, grafts, folds, and eyelids. METHODS: The collimated and the computerized pattern generator handpieces were used with the high-energy pulsed CO2 laser at 250-350 mJ to remodel tissue. Usually three or four passes were adequate to vaporize tissue and shrink **collagen** . RESULTS: A rejuvenated earlobe, eyelid, or forehead was produced in a predictable fashion. The tissue irregularities of scars, dog-ears, or trap-door deformities were reduced and **remodeled** . CONCLUSION: **Dermal remodeling** (selective dermaplasty) with the high-**energy** pulsed CO2 **laser** has proved a useful tool to **remodel** the **skin** . Areas such as the earlobe, the forehead, the eyelids, or skin lesions can be vaporized to develop a more youthful appearance. We find this a useful addition to the armamentarium of the cosmetic dermatologist.

35/5/21 (Item 6 from file: 73)
DIALOG(R)File 73:EMBASE

07916166 EMBASE No: 1999389588
A pilot study of in vivo immediate tissue contraction with COinf 2 skin laser resurfacing in a live farm pig
Ross E.V.; Yashar S.S.; Naseef G.S.; Barnette D.J.; Skrobal M.; Grevelink J.; Anderson R.R.
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Dermatologic Surgery (DERMATOL. SURG.) (United States) 1999, 25/11 (851-856)
CODEN: DESUF ISSN: 1076-0512
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 20

BACKGROUND. It has been suggested that tissue ablation, **collagen** shrinkage, and new **collagen** deposition contribute to the clinical outcome of laser skin resurfacing. OBJECTIVE. To study the effects of fluence and pass number on thermal damage and tissue shrinkage, we performed experiments in an in vivo farm pig **model** . METHODS. A COinf 2 **laser** was used to treat the flank **skin** of a farm pig. There were nine treatment sites based on number of passes and fluence per pass. Wound surface areas were measured pretreatment and immediately posttreatment. Biopsies were performed immediately after irradiation. RESULTS. Surface area measurements showed that immediate contraction tended to increase with increasing fluence and pass number up to a maximum of approximately 38% shrinkage, after which the percent contraction remained constant. Thermal damage

increased with pass number for low and moderate fluence groups; however, in high fluence groups the thermal damage remained constant with an increasing number of passes. CONCLUSIONS. Our results suggest that COinf 2 laser resurfacing produces immediate tissue contraction and residual thermal damage that is saturable for multiple passes and high fluences. For small fluences, however, there is an almost linear increase in thermal damage and shrinkage with an increasing number of passes.
?

NPL Bibliographic Database Search – General Engineering Databases

Search Strategy

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Set     Items   Description
S1    7684328   ENERGY OR ENERGIES OR RADIOFREQUENC? OR RADIO()FREQUENC? OR
             ULTRASO? OR ULTRA()(SONIC? OR SOUND?) OR LASER? OR ELECTROMA-
            GNET? OR ELECTRO()MAGNET? OR INFRARED? OR THERMAL? OR HEAT???
S2    6567345   RESHAP? OR RECONTOUR? OR CONVEX? OR SHAPE? ? OR SHAPING? OR
             CONTOUR? OR MODEL???? OR REMODEL? OR REFORM? OR SCULPT? OR R-
            ESCULPT?
S3       8636   TIGHTEN?
S4     541820   SKIN OR DERMIS OR DERMAL OR EPIDERM? OR DERMATOL? OR CUTAN-
            EOUS?
S5    1212697   ORGAN? ? OR TISSUE? ?
S6     107943   COLLAGEN?
S7    3120244   PRESSUR? OR PRESS OR PRESSE? ? OR PRESSING? OR FORCE? ? OR
            COMPRESS?
S8    6101710   CONTACT??? OR TOUCH??? OR APPLY? OR APPLIE? OR APPLICATION?
S9      10959   S2:S3(5N)S4
S10      3265   S2:S3(5N)S6
S11    611870   S1(5N)S7:S8
S12        11   S9 AND S10 AND S11
S13        10   RD  (unique items)
S14        44   S1 AND S10 AND S11
S15        25   S14 NOT (S12 OR PY=2003:2006)
S16        22   RD  (unique items)
S17        48   S1 AND S9 AND S10
S18        26   S17 NOT (S12 OR S15 OR PY=2003:2006)
S19        24   RD  (unique items)
S20        55   S1(5N)S2:S3(5N)S4 AND S6
S21        18   S20 NOT (S12 OR S15 OR S18 OR PY=2003:2006)
S22        18   RD  (unique items)
S23        25   S9 AND S11 AND S6
S24         7   S23 NOT (S12 OR S15 OR S18 OR S21)
S25         7   RD  (unique items)
S26    404891   S1(5N)S2:S3
S27     18748   S4(5N)S7:S8
S28        11   S26 AND S27 AND S6
S29         2   S28 NOT (S12 OR S15 OR S18 OR S21 OR S24)

File   2:INSPEC 1898-2006/May W4
         (c) 2006 Institution of Electrical Engineers
File   8:Ei Compendex(R) 1970-2006/May W4
         (c) 2006 Elsevier Eng.  Info. Inc.
File  94:JICST-EPlus 1985-2006/Mar W1
         (c)2006 Japan Science and Tech Corp(JST)
File 144:Pascal 1973-2006/May W2
         (c) 2006 INIST/CNRS
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Search Results

13/5/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

07723489 INSPEC Abstract Number: A2000-22-8770H-006, B2000-11-7520C-028
Title: In vivo experimental evaluation of non-ablative skin remodeling **using a 1.54 mu m laser with surface cooling**
Author(s): Mordon, S.; Capon, A.; Creusy, C.; Fleurisse, L.; Buys, B.; Faucheux, M.; Servell, P.
Author Affiliation: INSERM, Univ. Hosp., Lille, France
Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.3907 p.12-22
Publisher: SPIE-Int. Soc. Opt. Eng,
Publication Date: 2000 Country of Publication: USA
CODEN: PSISDG ISSN: 0277-786X
SICI: 0277-786X(2000)3907L.12:VEEA;1-D
Material Identity Number: C574-2000-140
U.S. Copyright Clearance Center Code: 0277-786X/2000/$15.00
Conference Title: Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems X
Conference Sponsor: SPIE; Int. Biomed. Opt. Soc
Conference Date: 22-25 Jan. 2000 Conference Location: San Jose, CA, USA
Language: English Document Type: Conference Paper (PA); Journal Paper (JP)
Treatment: Experimental (X)
Abstract: Selective **dermal remodeling** using diode or 1.32 mu m Nd:YAG lasers has been recently proposed for skin rejuvenation. This new technique consists in inducing **collagen tightening** and/or neocollagen synthesis without significant damage of the overlying epidermis. Such an approach requires (1) a cooling system in order to target dermal collagen with relatively good protection of the epidermal layer, (2) a specific wavelength for confining the thermal damage into the upper dermis (100 to 400 mu m). Based on previous studies, demonstrating a better water absorption and a reduced melanin absorption at 1.54 mu m compared to the 1.32 mu m, this experimental study aimed to evaluate a new laser (co-doped Yb-Er:phosphate glass material, Aramis, Quantel-France) emitting at 1.54 mu m. This laser was used in combination with the Dermacool system (Dermacool, Mableton, USA) in order to achieve epidermis cooling before, during and after irradiation. Male hairless rats were used for the study. Pulse train irradiation (1.1 J, 3 Hz, 30 pulses) and different cooling temperatures (+5 degrees C, 0 degrees C, -5 degrees C) were screened with clinical examination and histological evaluation at 1, 3, and 7 days after laser irradiation. The clinical effects showed that pulse train irradiation produced reproducible epidermal preservation and confinement of the thermal damage into the dermis. The different cooling temperatures did not provide detectable differences in terms of size and depth of thermal damage. New collagen synthesis was confirmed by a marked fibroblastic proliferation, detected in the lower dermis at D3 and clearly seen in the upper dermis at D7. This new laser appears to be a promising new tool for the treatment of skin laxity, solar elastosis, facial rhytids and mild reduction of

wrinkles. (17 Refs)
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13/5/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

07723488 INSPEC Abstract Number: A2000-22-8770H-005, B2000-11-7520C-027
Title: Subsurface wrinkle removal by laser treatment in combination with dynamic cooling
Author(s): Paithankar, D.; Hsia, J.; Ross, E.V.
Author Affiliation: Candela Corp., Wayland, MA, USA
Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.3907 p.4-11
Publisher: SPIE-Int. Soc. Opt. Eng,
Publication Date: 2000 Country of Publication: USA
CODEN: PSISDG ISSN: 0277-786X
SICI: 0277-786X(2000)3907L.4:SWRL;1-M
Material Identity Number: C574-2000-140
U.S. Copyright Clearance Center Code: 0277-786X/2000/$15.00
Conference Title: Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems X
Conference Sponsor: SPIE; Int. Biomed. Opt. Soc
Conference Date: 22-25 Jan. 2000 Conference Location: San Jose, CA, USA
Language: English Document Type: Conference Paper (PA); Journal Paper (JP)
Treatment: Theoretical (T); Experimental (X)
Abstract: Compared to traditional CO/sub 2/ or Er:YAG laser resurfacing, sub-surface thermal injury to stimulate **skin remodeling** for the removal of wrinkles is attractive due to the lower morbidity associated with epidermal preservation. We have developed a technique that thermally damages dermal collagen while preserving the epidermis by a combination of infra-red laser irradiation and dynamic cooling of skin. Wound healing response to the thermal denaturation of collagen may trigger synthesis of fresh collagen and result in restoration of a more youthful appearance. The laser wavelength is chosen so as to thermally injure dermis in a narrow band at depths of 150 to 500 microns from the surface of the skin. The epidermis is preserved by a Candela dynamic cooling device (DCD/sup TM/) cryogen spray. Three-dimensional Monte Carlo calculations have been done to calculate the light distribution within tissue while taking into account light absorption and scattering. This light distribution has been used to calculate heat generation within tissue. Heat transfer calculations have been done while taking into consideration the cryogen cooling. The resulting temperature profiles have been used to suggest heating and cooling parameters. Freshly excised ex vivo pig skin was irradiated with laser and DCD at these heating and cooling parameters. Histological evaluation of the biopsies has shown that it is possible to spare the epidermis while thermally denaturing the **dermal collagen** . The **modeling** and histology results are discussed. (17 Refs)

13/5/10 (Item 5 from file: 144)
DIALOG(R)File 144:Pascal

14662293 PASCAL No.: 00-0335021
Nonablative resurfacing
Aesthetic laser surgery
GOLDBERG D J
ROBERTS Thomas L III, ed; POZNER Jason N, ed
Skin Laser and Surgery Specialists of New York and New Jersey, Westwood, New Jersey, United States
Medical University of South Carolina at Spartanburg, Spartanburg, SC, United States
Journal: Clinics in plastic surgery, 2000, 27 (2) xi, 287-292 (7 p.)
ISSN: 0094-1298 CODEN: CPSUDA Availability: INIST-16713; 354000087243620120
No. of Refs.: 8 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
Nonablative, or subsurface remodeling, is the newest approach to improving photodamaged **skin** . Because the degree of **collagen remodeling** is not as great as that of other, more destructive ablative approaches, the process can be ideal for individuals with limited time, wishing to improve (with lasers) the quality of their sun-damaged skin. In addition, nonablative laser systems may be used to maintain the rejuvenating effect of ablative laser systems.

16/5/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

08721589 INSPEC Abstract Number: A2003-20-8760F-009, B2003-10-4360H-003
Title: Thermo-optical skin conditioning: a new method for thermally modifying skin conditions
Author(s): Neev, J.; Links, J.L.S.; Calderon, N.; Littler, C.M.; Kaufman, T.; Sun, R.; Links, J.
Author Affiliation: Y-Beam Technol. Inc., Lake Forest, CA, USA
Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.4609 p.94-106
Publisher: SPIE-Int. Soc. Opt. Eng,
Publication Date: 2002 Country of Publication: USA
CODEN: PSISDG ISSN: 0277-786X
SICI: 0277-786X(2002)4609L.94:TOSC;1-P
Material Identity Number: C574-2003-072
U.S. Copyright Clearance Center Code: 0277-786X/02/$15.00
Conference Title: Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems XII
Conference Sponsor: SPIE
Conference Date: 19-22 Jan. 2002 Conference Location: San Jose, CA, USA
Language: English Document Type: Conference Paper (PA); Journal Paper (JP)
Treatment: Practical (P); Experimental (X)
Abstract: Pulsed CO/sub 2/ **laser** resurfacing improves photo-damage and

acne scarring by removing abnormal tissue with subsequent regeneration and **remodeling** of **collagen** through **heat** induced **collagen** contraction. On the other extreme, Normal Mode Er:YAG **lasers** operate yielding ablative tissue removal with a **thermal** damage zone that can be limited to fewer then ten microns. This study introduces and evaluates the effectiveness of a new method of Thermo-optical Skin Conditioning (TSQ). This method allows the user to induce tissue effects that span the entire range from the purely **thermal** tissue modification (CO/sub 2/-like) to the highly mechanical effects induced by dermabrasion and Er:YAG **lasers** . TSC utilizes an optical **energy** in conjunction with a highly absorbing substance (HAS) deposited on a thin, **thermally** conductive intermediate material module (IMM) allowing the user to achieve optical to **thermal** **energy** conversion. The **thermal** **energy** is allowed specific interaction time determined by the scanning spatial pattern and scanning rate. The total amount of power density deposited in the tissue is a function of **laser** power, scan rate, spot size, and the synchronized action of the **energy** removal system (ERS) incorporated and synchronously activated at the end of the interaction period. A substance capable of efficiently absorbing **laser** light was **applied** to one side of an intermediate medium material to be placed in contact with the target skin. The intermediate medium material was then formed into a tape that was capable of advancing along a flat surface. An 810 nm diode **laser** was used as an **energy** source. Galvanometer scanners and a lens were used to cover an area of approximately 50 mm/sup 2/. Different power settings and scan rates determined the maximum power density and fluence at the target area. Following the experiments, the skin was then fixed in 10% Formalin and used for histological section preparations and optical light microscopy evaluation. The samples were then evaluated for histological changes and to measure ablation and **thermal** damage depth. In addition, measurements of **thermal** tissue response during and after the interaction were performed using both thermocouples and an **infrared** **thermal** camera. Epidermis ablation ranged from as little as 10 mu m per pass, to as much as 50 mu m per pass. The depth of **thermal** damage decreased with scan frequency and with decreased **laser** power. Temperature increase ranged from 150 degrees C to as much as 900 degrees C. ERS temperature control allowed restoration of ambient temperature within less then 250 ms. TSC is shown to be a very effective method for inducing a range of tissue modification effects ranging from highly **thermal** to mechanical/non- **thermal** effects. (17 Refs)

16/5/6 (Item 1 from file: 8)

06771614 E.I. No: EIP04138077302

Title: Modeling **the** thermal **histories of** collagenous **tissues subjected to different** heating **modalities**

Author: Aksan, Alptekin; Nielubowicz Jr., David S.; McGrath, John J.

Corporate Source: Department of Mechanical Engineering Michigan State University, East Lansing, MI 48824, United States

Conference Title: 2001 ASME International Mechanical Engineering Congress and Exposition

Source: American Society of Mechanical Engineers, Heat Transfer Division, (Publication) HTD v 370 2001.

Publication Year: 2001

CODEN: ASMHD8 ISSN: 0272-5673
Language: English
Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)
Journal Announcement: 0403W5
Abstract: **Application** of sub-ablative levels of **heat** to collagenous tissues causes helix-to-coil transformation in the collagen microstructure resulting in overall tissue shrinkage. This phenomenon has important therapeutic applications in medicine, such as thermokeratoplasty, treatment of shoulder, knee and ankle instabilities and treatment of chronic discogenic lumbar pain associated with hemiated discs. During the therapy, **heat** is **applied** arthroscopically by a **laser** or a **radio - frequency** probe (bipolar or monopolar). The amount and permanence of shrinkage established in the tissue is a function of the maximum temperature reached and the exposure time as well as the mechanical stress **applied** on the tissue during **heating** . Therefore, the **thermal** and mechanical history that the tissue experiences is a major factor determining its response and long-term mechanical stability. These are the defining factors for the success of the therapy. It is hypothesized in this study that there are significant differences between the **thermal** histories created in the tissue by different **heating** modalities owing to the differences between their modes of action. The solutions to the temperature distributions created by these different **heating** modalities - **laser** and **radiofrequency** **applied** with a bipolar and a monopolar probeare compared and parameters of clinical significance are discussed. 31 Refs.

16/5/12 (Item 7 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

03718333 E.I. No: EIP93040758279
Title: Thermal **modeling of** laser **photothermo keratoplasty**
Author: Zhou, Zhiping J.; Ren, Qiushi; Simon, Gabriel M.D.; Parel, Jean-Marie
Corporate Source: Univ. of Miami Sch. of Medicine, Miami, FL, USA
Conference Title: Ophthalmic Technologies II
Conference Location: Los Angeles, CA, USA Conference Date: 19920119-19920121
Sponsor: SPIE - Int Soc for Opt Engineering, Bellingham, WA, USA
E.I. Conference No.: 17478
Source: Proceedings of SPIE - The International Society for Optical Engineering v 1644 1992. Publ by Int Soc for Optical Engineering, Bellingham, WA, USA. p 61-71
Publication Year: 1992
CODEN: PSISDG ISSN: 0277-786X ISBN: 0-8194-0790-9
Language: English
Document Type: CA; (Conference Article) Treatment: X; (Experimental); A ; (Applications)
Journal Announcement: 9311W4
Abstract: **Laser** photo thermo keratoplasty (LPTK) is a refractive procedure that changes the curvature of the cornea by **laser** induced collagen shrinkage. To understand the temperature distribution induced by the **laser** radiation inside the cornea, a photo- **thermal** theoretical model is employed to simulate this process. The 4-D space-time temperature distributions within the cornea are calculated and depicted. The effects of

the incident fluence and the **laser** spot size on temperature relaxation rate is discussed. Optimization of incident fluence on the surface of the cornea is made. The comparison between calculated and experimental regions of collagen shrinkage is given. Recommendations for the design of clinical surgery instruments are also presented. (Author abstract) 11 refs.

16/5/18 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal

15048710 PASCAL No.: 01-0206473
Radiofrequency energy **-induced** heating **of bovine capsular tissue : Temperature changes produced by bipolar versus monopolar electrodes**
SHELLOCK Frank G
Department of Radiology, School of Medicine, The University of Southern California, Los Angeles, California, United States
Journal: Arthroscopy, 2001, 17 (2) 124-131
ISSN: 0749-8063 CODEN: ARTHE3 Availability: INIST-20604; 354000098682670020
No. of Refs.: 20 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
Purpose: To determine temperature changes associated with **radiofrequency** (RF) **energy** -induced **heating** of bovine capsular tissue using a bipolar RF electrode versus a temperature-controlled, monopolar RF electrode. Type of Study: In vitro laboratory investigation using bovine capsular tissue. Methods: Samples of bovine tissue were placed in a saline bath (37 Degree C) and RF **energy** was **applied** using bipolar and monopolar RF electrodes at manufacturer-recommended settings for tissue shrinkage. Fluoroptic thermometry was used to record temperatures on the tissue surface and at depths of 1 mm and 2 mm during continuous delivery of RF **energy** at 1, 2, 3, 4, 5, and 10 second time increments. Results: The highest mean temperatures were recorded on the tissue surface, as follows (mean +- SD; SUP * P <.05, value compared with baseline): 1 sec 2 sec 3 sec 4 sec 5 sec 10 sec Bipolar 40.1 +- 1.0 SUP * 48.2 +- 4.7 SUP * 62.8 +- 6.9 SUP * 76.0 +- 7.6 SUP * 84.7 +- 5.7 SUP * 94.7 +- 1.9 SUP * Monopolar 39.0 +- 0.7 SUP * 48.2 +- 4.3 SUP * 67.7 +- 7.0 SUP * 86.6 +- 6.1 SUP * 93.8 +- 2.7 SUP * 59.5 +- 2.6 SUP * For the bipolar RF electrode, there was a strong linear relationship (R =.926) between mean surface temperatures versus time. The temperature-controlled, monopolar RF electrode did not appear to properly regulate the delivery of RF **energy** to maintain tissue temperatures at the selected level (i.e., 65 Degree C). The bipolar RF electrode produced a smaller temperature gradient (average difference. 9.2 Degree C) at the 1-mm tissue depth compared with the monopolar RF electrode (average difference, 14.6 Degree C). Temperature profiles at the 2-mm tissue depth were comparable for both types of RF electrodes. Conclusions: These data provide basic information pertaining to the temperature profiles produced by bipolar and monopolar RF electrodes applied to collagen-based tissue.

19/5/2 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05610894 E.I. No: EIP00075246816
Title: In vivo experimental evaluation of non-ablative skin remodeling **using a 1.54 mu m** laser **with surface cooling**
Author: Mordon, Serge; Capon, Alexandre; Creusy, Colette; Fleurisse, Laurence; Buys, Bruno; Faucheux, Marc; Servell, Pascal
Corporate Source: Univ Hospital, Lille, Fr
Conference Title: Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems X
Conference Location: San Jose, CA, USA Conference Date: 19000122-19000125
Sponsor: SPIE; IBOS
E.I. Conference No.: 57002
Source: Proceedings of SPIE - The International Society for Optical Engineering v 3907 2000. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, USA. p 12-22
Publication Year: 2000
CODEN: PSISDG ISSN: 0277-786X
Language: English
Document Type: CA; (Conference Article) Treatment: X; (Experimental)
Journal Announcement: 0008W5
Abstract: Selective **dermal remodeling** using diode or 1.32 mu m Nd:YAG **lasers** has been recently proposed for skin rejuvenation. This new technique consists in inducing **collagen tightening** and/or neocollagen synthesis without significant damage of the overlying epidermis. Such an approach requires i) a cooling system in order to target dermal collagen with relatively good protection of the epidermal layer, ii) a specific wavelength for confining the **thermal** damage into the upper dermis (100 to 400 mu m). Based on previous studies, demonstrating a better water absorption and a reduced melanin absorption at 1.54 mu m compared to the 1.32 mu m, this experimental study aimed to evaluate a new **laser** (co-doped Yb-Er:phosphate glass material, Aramis, Quantel-France) emitting at 1.54 mu m. This **laser** was used in combination with the Dermacool system (Dermacool, Mableton, USA) in order to achieve epidermis cooling before, during and after irradiation. Male hairless rats were used for the study. Pulse train irradiation (1.1 J, 3 Hz, 30 pulses) and different cooling temperatures (plus 5 degree C, 0 degree C, minus 5 degree C) were screened with clinical examination and histological evaluation at 1, 3, and 7 days after **laser** irradiation. The clinical effects showed that pulse train irradiation produced reproducible epidermal preservation and confinement of the **thermal** damage into the dermis. The different cooling temperatures did not provide detectable differences in terms of size and depth of **thermal** damage. New collagen synthesis was confirmed by a marked fibroblastic proliferation, detected in the lower dermis at D3 and clearly seen in the upper dermis at D7. This new **laser** appears to be a promising new tool for the treatment of skin laxity, solar elastosis, facial rhytids and mild reduction of wrinkles. (Author abstract) 17 Refs.

19/5/3 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05610893 E.I. No: EIP00075246815
Title: Sub-surface wrinkle removal by laser treatment in combination with dynamic cooling
Author: Paithankar, Dilip; Hsia, Jim; Ross, E. Victor
Corporate Source: Candela Corp, Wayland, MA, USA

Conference Title: Lasers in Surgery: Advanced Characterization, Therapeutics, and Systems X
Conference Location: San Jose, CA, USA Conference Date: 19000122-19000125
Sponsor: SPIE; IBOS
E.I. Conference No.: 57002
Source: Proceedings of SPIE - The International Society for Optical Engineering v 3907 2000. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, USA. p 4-11
Publication Year: 2000
CODEN: PSISDG ISSN: 0277-786X
Language: English
Document Type: CA; (Conference Article) Treatment: A; (Applications); G ; (General Review)
Journal Announcement: 0008W5
Abstract: Compared to traditional CO//2 or Er:YAG **laser** resurfacing, sub-surface **thermal** injury to stimulate **skin remodeling** for the removal of wrinkles is attractive due to the lower morbidity associated with epidermal preservation. We have developed a technique that **thermally** damages dermal collagen while preserving the epidermis by a combination of infra-red **laser** irradiation and dynamic cooling of skin. Wound healing response to the **thermal** denaturation of collagen may trigger synthesis of fresh collagen and result in restoration of a more youthful appearance. The **laser** wavelength is chosen so as to **thermally** injure dermis in a narrow band at depths of 150 to 500 microns from the surface of the skin. The epidermis is preserved by a Candela dynamic cooling device (DCD**T**M) cryogen spray. Three-dimensional Monte Carlo calculations have been done to calculate the light distribution within tissue while taking into account light absorption and scattering. This light distribution has been used to calculate **heat** generation within tissue. **Heat** transfer calculations have been done while taking into consideration the cryogen cooling. The resulting temperature profiles have been used to suggest **heating** and cooing parameters. Freshly excised ex vivo pig skin was irradiated with **laser** and DCD at these **heating** and cooling parameters. Histological evaluation of the biopsies has shown that it is possible to spare the epidermis while **thermally** denaturing the **dermal collagen** . The **modeling** and histology results are discussed. (Author abstract) 17 Refs.

19/5/7 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

16209715 PASCAL No.: 03-0369773
One-pass resurfacing with a combined-mode erbium: YAG/CO SUB 2 laser system: a study in 102 patients
TRELLES M A; ALLONES I; LUNA R
Instituto Medico Vilafortuny/Antoni de Gimbernat Foundation, Av. Vilafortuny 31, 43850 Cambrils, Spain
Journal: British journal of dermatology : (1951), 2002, 146 (3) 473-480
ISSN: 0007-0963 CODEN: BJDEAZ Availability: INIST-1043; 354000111394590150
No. of Refs.: 10 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United Kingdom
Language: English
Background The CO SUB 2 and erbium: YAG (Er: YAG) **lasers** have been used

for skin resurfacing. A recently developed system combines pulsed ablative Er: YAG and continuous wave subablative CO SUB 2 wavelengths in one console. Objectives To assess the potential benefits of this system. Methods The study follows 102 women, skin types I-V, with 26 full face, 48 perioral and 28 periocular resurfacing procedures. The ablative Er: YAG pulse (350 mu s, 29 J cm SUP - SUP 2) is followed immediately by a non-ablative CO SUB 2 **laser** shot (4-6 W, 50 ms) through the same collimated handpiece (3-mm diameter spot), 50% overlapping, repetition rate 10 Hz, giving two-pass equivalence with one single pass. Results Patients scored the results as very good (n = 67), good (n = 25) and fair (n = 10). Mild but successfully resolved side-effects occurred in only four patients. The 2-month histology showed a good band of new **collagen tightening** the overlying healthy **epidermis** . Follow-up periods ranged from 1.5 to 2 years (mean +- SD 1.76 +- 0.33). Conclusions This device at the above settings offers speedy resurfacing without compromising the quality of the procedure for the patient, and may well satisfy the basic requirements of **laser** skin resurfacing.

19/5/10 (Item 4 from file: 144)

DIALOG(R)File 144:Pascal

15506821 PASCAL No.: 02-0202878

Short-term histologic effects of nonablative resurfacing: Results with a dynamically cooled millisecond-domain 1320 nm Nd :YAG laser

FATEMI Afschin; WEISS Margaret A; WEISS Robert A

Department of Dermatology, Katharinen-Hospital, Duesseldorf, Germany; Department of Dermatology, Johns Hopkins University School of Medicine, Baltimore, Maryland, United States

Journal: Dermatologic surgery, 2002, 28 (2) 172-176

ISSN: 1076-0512 Availability: INIST-17417; 354000102743230140

No. of Refs.: 11 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: United States

Language: English

BACKGROUND. It is widely believed that nonablative **laser** techniques can lead to **dermal collagen remodeling** without the obvious **epidermal** injury and the wound created with ablative approaches. This occurs when dermal collagen injury is induced without visible injury to the overlying epidermis. OBJECTIVE. To examine the acute histologic effects both 1 hour and several days after standardized treatment protocols of dynamically cooled millisecond domain Nd:YAG 1320 nm **laser** to provide further insight into the mechanism of action of nonablative resurfacing. METHODS. Multiple adjacent sites on the preauricular area of the cheek of 10 patients were biopsied following one to three **laser** passes of dynamically cooled millisecond-domain Nd: YAG 1320 nm **laser** . Biopsies were performed at 1 hour and at 3 days following a single treatment. The number of passes was varied from one to three and T SUB m SUB a SUB x (peak temperature measured by integrated radiometer) during treatment was targeted for 45-48 Degree C, RESULTS. At 1 hour after treatment, epidermal spongiosis and edema of the basal cell layer were present in all the specimens treated with three passes. At 3 days the three pass samples also showed microthrombosis, widened vessels, sclerosis of the vessel walls, and infiltration of neurophilic granulocytes. The occurrence of these histologic findings correlated well with the presence of clinical improvement (judged by

photographs) at 8 weeks after treatment. Acute histologic changes and clinical improvement were not observed below treatment temperatures of T SUB m SUB a SUB x 45 Degree C or after one pass alone. Repeated temperatures above a T SUB m SUB a SUB x of 48 Degree C incurred risk of epidermal injury. CONCLUSION. Even though longer-term histologic findings have confirmed the collagen synthesis component of 1320 nm Nd:YAG **laser** , our data indicate that there may be some additional factors other than dermal collagen **heating** with subsequent collagen repair. The concept of true "nonablative resurfacing" may involve some form of subclinical epidermal injury that improves the clinical outcome. Acute changes involving superficial blood vessel injury with cytokine release may also be implicated. Our histologic findings suggest that three passes with fluence and cooling adjusted to a T SUB m SUB a SUB x of 45 Degree C-48 Degree C yields improved clinical results.

19/5/11 (Item 5 from file: 144)
DIALOG(R)File 144:Pascal

15360230 PASCAL No.: 02-0047860
Facial rejuvenation with a nonablative 1320 nm Nd :YAG laser **: A preliminary clinical and histologic evaluation. Commentary**
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Journal: Dermatologic surgery, 2001, 27 (2) 111-116
ISSN: 1076-0512 Availability: INIST-17417; 354000099888750030
No. of Refs.: 16 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
BACKGROUND. Rejuvenation of photoaged skin involves removal of the epidermis and superficial dermis, encouraging the production of new **epidermis** with **collagenesis** and **remodeling** . The facial appearance during healing is unpleasant, and the complication rate is high. OBJECTIVE. We evaluate a Q-switched Nd:YAG **laser** operating at 1320 nm, with a cryogen delivery system and a skin temperature sensor. The system cools the target skin, followed by the **laser** impulse which passes through the cooled epidermis into the dermis. METHODS. Ten patients are presented. Two treatments a week were given over 4 weeks, and the patients were seen at 2 and 6 weeks after the final treatment. RESULTS. The histology showed improvement in the condition of the dermis in all 10 patients, but only 2 of the 10 patients expressed satisfaction with the results, despite similar histologic findings. CONCLUSIONS. Careful patient selection is required. Better patient education is necessary to ensure that the patients' expectations are realistic. We should add treatments that will improve the youthful aspect of the epidermis. The system may well help in maintaining the effects of **collagen remodeling** following traditional ablative resurfacing procedures, but studies are necessary to show this.

19/5/12 (Item 6 from file: 144)
DIALOG(R)File 144:Pascal

15267067 PASCAL No.: 01-0437111
Er:YAG laser **resurfacing using combined ablation and coagulation modes**
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Journal: Dermatologic surgery, 2001, 27 (8) 727-734
ISSN: 1076-0512 Availability: INIST-17417; 354000097166150060
No. of Refs.: 24 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
BACKGROUND. The two main **laser** types used in resurfacing, the CO SUB 2 and the Er:YAG **lasers** , have their supporters and detractors, and each system has clear advantages and disadvantages. OBJECTIVE. The Er:YAG **laser** can be used in the usual efficient ablative mode, followed by reprogramming to achieve nonablative deeper dermal coagulation associated with the CO SUB 2 **laser** , thereby achieving the main advantages of both **laser** types. PATIENTS AND METHODS. Twenty-three female patients, ages 42-72 yrs, skin types I-IV, were treated. The epidermis was first removed in the ablative settings in a single pass with 50% overlap. The Er:YAG **laser** was reprogrammed for the subablative mode, and several passes produced controlled residual **thermal** damage (RTD) without further ablation. RESULTS. At 2 months postresurfacing the results were assessed. Thirteen patients were rated "very good," eight as "good," and two as "fair." CONCLUSION. The dual mode Er:YAG **laser** can first be used in the ablative mode to remove the epidermis with minimal RTD, following which, in the subablative mode, the same **laser** induces a controlled layer of dermal RTD, stimulating the **dermis** to achieve **collagenesis** and **collagen remodeling** and giving good long-term results.

19/5/13 (Item 7 from file: 144)
DIALOG(R)File 144:Pascal

14900910 PASCAL No.: 01-0049376
Collagen tightening **induced by carbon dioxide** laser **versus erbium :YAG** laser
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Journal: Lasers in surgery and medicine, 2000, 27 (5) 395-403
ISSN: 0196-8092 CODEN: LSMEDI Availability: INIST-18391; 354000092792420010
No. of Refs.: 24 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
Background and Objective: Pulsed CO SUB 2 **laser** resurfacing improves photodamage and acne scarring by ablation of abnormal tissue with subsequent regeneration and **remodeling** of **collagen** and through **heat** induced collagen contraction. Whether collagen contraction persists

long-term and helps maintain the **skin tightening** observed after resurfacing is debated. One possible mechanism of long-term clinical tightening is that of wound contracture that occurs as part of normal wound healing. If normal wound contracture, and not **heat** induced collagen contraction, is responsible for maintaining the initial **skin tightening** seen in CO SUB 2 **laser** resurfacing, then equal results would be expected from resurfacing with either CO SUB 2 or erbium **lasers** . The study was performed to determine whether there is a difference in **skin tightening** secondary to **thermally** mediated **collagen** contraction versus that which occurs secondary to tissue contraction of wound healing. The persistence of these changes over 6 months and the histologic characteristics were studied as well. Study Design/Materials and Methods: Nine patients had four tattoo dots applied to the upper eyelids, with horizontal axis measuring 18-20 mm and the vertical axis 6-10 mm. One month later, one eyelid was treated with three passes of the UltraPulse CO SUB 2 **laser** and the other eyelid with an erbium **laser** to the end point of early pinpoint bleeding. Three patients were treated with additional passes after pinpoint bleeding was encountered. The total number of pulses used per patient was recorded. Measurements of the vertical and horizontal distances were made after each pass and monthly for 6 months. The treated skin was then excised in performance of an upper lid blepharoplasty and the tissue submitted for histologic analysis. Results: In the vertical plane, the UltraPulse CO SUB 2 **laser** induced an average of 43% tightening intraoperatively and this gradually diminished to an average of 34% by 6 months, whereas the wound contracture of erbium resurfacing was not seen until 1 month postoperatively, at which time 42% tightening was seen, gradually diminishing to 36% at 6 months. Three patients with erbium resurfacing had scarring present. These were the three patients treated most aggressively and also the three patients with the most significant wound contracture. Scarring was not seen on the CO SUB 2 treated side in any patients. In the horizontal plane, the CO SUB 2 **laser** caused 31% intraoperative tightening, decreasing to 19% at 6 months. In this plane, the erbium **laser** induced wound contracture was 12% at 1 month which remained stable and unchanged. Conclusions: Although wound contraction secondary to tissue healing may result in nearly the same tissue **tightening** as **heat** -induced **collagen** contraction, the two processes are very different and variable, with increased risk of scarring seen with wound contracture, compared with **heat** -induced **collagen tightening** . The tissue **tightening** seen with **thermally** induced **collagen** contraction is long-lasting, if not "permanent."

19/5/14 (Item 8 from file: 144)

DIALOG(R)File 144:Pascal

14888006 PASCAL No.: 01-0035662

The vector structure of laser **biospeckle fields and polarization diagnostics of collagen skin structures**

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Journal: Laser physics, 2000, 10 (5) 1143-1149

ISSN: 1054-660X Availability: INIST-26554; 354000092687320160

No. of Refs.: 7 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: Russia

Language: English
The transformation of the polarization and correlation structure of low-intensity **laser** radiation by skin is considered. The method of matrix **modeling** of optical properties of **skin** **epidermis** and derma is proposed. This approach is employed to analyze the mechanisms behind the transformation of the polarization state of scattered **laser** radiation field and the formation of an ensemble of coherent biospeckles. The technique for the polarization diagnostics of the structure of the collagen network in skin derma is proposed.

19/5/15 (Item 9 from file: 144)
DIALOG(R)File 144:Pascal

14886776 PASCAL No.: 01-0034348
Full-face nonablative dermal remodeling with a 1320 nm Nd:YAG laser
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Journal: Dermatologic surgery, 2000, 26 (10) 915-918
ISSN: 1076-0512 Availability: INIST-17417; 354000092631960030
No. of Refs.: 13 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
BACKGROUND. Full-face **laser** -induced **dermal** **remodeling** has traditionally involved ablative methods with their associated complications and limitations. Rhytide improvement requires, among other things, **dermal** **collagen** **remodeling** . Such **remodeling** has been shown to occur without the requirement of epidermal ablation. OBJECTIVE. To evaluate the investigator's objective and patient's subjective improvement seen after full-face treatment with a 1320 nm Nd:YAG **laser** . METHODS. Ten patients with class I-II rhytides and Fitzpatrick skin types I-II were treated five times over 3-4 week intervals with a 1320 nm Nd:YAG **laser** . Patients were evaluated for degree of clinical improvement 6 months after their final treatment. RESULTS. All 10 subjects reported subjective improvement in the quality of their skin. Only six subjects were felt by the investigator to show definitive clinical improvement. Six-month posttreatment biopsies showed evidence of new collagen formation. CONCLUSION. Irradiation with 1320 nm Nd:YAG **laser** can lead to new collagen formation and associated clinical improvement. Such full-face improvement can occur without epidermal ablation.

19/5/16 (Item 10 from file: 144)
DIALOG(R)File 144:Pascal

14559239 PASCAL No.: 00-0225406
Nonablative treatment of rhytids with intense pulsed light
Dermatologic Laser **Surgery**
GOLDBERG D J; CUTLER K B
NELSON J Stuart, ed
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Journal: Lasers in surgery and medicine, 2000, 26 (2) 196-200
ISSN: 0196-8092 CODEN: LSMEDI Availability: INIST-18391; 354000082019320090
No. of Refs.: 10 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
Background and Objective: The aim of this study was to evaluate the efficacy and complication rate of a nonablative nonlaser light source in the treatment of rhytids. **Laser** resurfacing, in the treatment of facial rhytids, has involved ablative methods, with their associated complications and limitations. Rhytid improvement requires **dermal collagen remodeling** . Interest has begun to focus on the use of wavelengths that preserve the epidermis but deliver enough **energy** to promote rhytid improvement. Study Design/Materials and Methods: Thirty subjects with class I-II rhytids and Fitzpatrick skin types I-II were treated with up to four treatments with an intense pulsed light source. Subjects were evaluated 6 months after the final treatment. Results: Twenty-five subjects showed some improvement in the quality of skin. No subjects were found to have total resolution of rhytids. Conclusion: Nonlaser intense pulsed light may effectively improve some facial rhytids. Such improvement can occur without epidermal ablation.

19/5/19 (Item 13 from file: 144)
DIALOG(R)File 144:Pascal

14061194 PASCAL No.: 99-0252526
Long-term effects of one general pass laser **resurfacing. A look at** dermal tightening **and** skin **quality. Commentary**
RUIZ-ESPARZA J; BARBA GOMEZ J M; DZUBOW L comment
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Journal: Dermatologic surgery, 1999, 25 (3) 169-174
ISSN: 1076-0512 Availability: INIST-17417; 354000083343860040
No. of Refs.: 19 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
BACKGROUND. **Laser** resurfacing with high- **energy** , short-pulsed **lasers** is generally a safe and cosmetically rewarding procedure. Nevertheless, the aggressive use of these instruments has the potential for unpredictable, undesirable complications. It has long been held that multiple passes are needed to achieve **dermal tightening** (**collagen** shrinkage), which will result in a cosmetically desirable appearance. The observation of **skin tightening** after one general pass has not been previously reported. OBJECTIVE. To look at the long-term results after only one general pass and of focal multiple passes over lines, with particular attention to the degree of **tightening** and quality of the **skin** . METHODS. Fifteen patients

with varying degrees of photodamage and resulting skin laxity, and with at least eighteen months follow-up, were evaluated. High quality photographic records were compared between pre- and postoperative pictures at three different angles on each. RESULTS. Cosmetically significant **dermal tightening** was observed in all of these patients. This was noted in some patients after six months and continued for several months after. All patients were pleased with the cosmetic improvement obtained. Of note were fast healing and the absence of significant complications in these patients. CONCLUSIONS: The appearance of **dermal tightening** as a late occurrence in the postoperative course after one single general pass has not been previously reported. When numerous general passes are done, **dermal tightening** is quite impressive and appears much sooner; however, much of this result is due to edema and the resulting skin quality in these patients is different. A more natural look is achieved if only one pass is done. The procedure is safer and has a faster recovery period.

19/5/21 (Item 15 from file: 144)
DIALOG(R)File 144:Pascal

13297646 PASCAL No.: 98-0020874
Cutaneous resurfacing : Analysis and treatment of the aging face
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Journal: Dermatologic clinics, 1997, 15 (4) viii,569-582 (15 p.)
ISSN: 0733-8635 CODEN: DRMCDJ Availability: INIST-20617; 354000069742250040
No. of Refs.: 49 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
Cutaneous resurfacing can be accomplished with application of acids, abrasive modalities, or the new generation of carbon dioxide **lasers** . Ultimately, the universal goal is removal and replacement of the **epidermis** and dermal **collagen remodeling** . The indications range from therapeutic and reconstruction to the treatment of the stigmata associated with senescence. The indications are not technique-specific, and the art of cutaneous resurfacing is identifying the cutaneous defect and selecting the appropriate tool or tools to realize the optimal clinical results.

22/5/6 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

15809953 PASCAL No.: 02-0526491
Nonablative laser skin resurfacing using a 1540 nm erbium glass laser: A clinical and histologic analysis
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Washington Institute of Dermatologic Laser Surgery, Washington, DC, United States
Journal: Dermatologic surgery, 2002, 28 (9) 833-835
ISSN: 1076-0512 Availability: INIST-17417; 354000105067810100
No. of Refs.: 24 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English

BACKGROUND. A variety of **laser** systems have recently become available that allow for selective **dermal remodeling** without disruption of the epidermal surface. Modest clinical improvement in mild to moderate photoinduced facial rhytides with minimal morbidity is typical of these nonablative lasers, providing a significant advantage over traditional ablative laser systems. OBJECTIVE. To determine the clinical and histologic effects of a novel 1540 nm erbium glass laser on facial rhytides. METHODS. Patients with mild to moderate periorbital and perioral rhytides received a series of three monthly treatments with a 1540-nm erbium-doped phosphate glass laser by a single operator. Photographic and clinical evaluations were independently conducted by the patient and a masked medical observer at each treatment visit and at 1, 3, and 6 months following the final treatment session. Skin biopsies were obtained for histologic analysis by a board-certified dermatopathologist at baseline, immediately following laser irradiation, and at one and six months post-treatment. RESULTS. Slow, progressive clinical improvement of rhytides was noted in all patients after each treatment and continued throughout the extended follow-up period. Side effects of treatment were limited to transient erythema and edema immediately following laser irradiation. No serious adverse effects were noted. Histologic skin changes were not apparent until several months following treatment, when an increase in dermal **collagen** was noted. CONCLUSIONS. The nonablative 1540 nm erbium glass laser system with contact cooling produces gradual clinical and histologic improvement in mild to moderate facial rhytides with minimal risk of serious adverse sequelae.

22/5/8 (Item 3 from file: 144)
DIALOG(R)File 144:Pascal

15323157 PASCAL No.: 02-0008893
Nonablative remodeling : Clinical, histologic, ultrasound imaging, and profilometric evaluation of a 1540 nm Er:glass laser
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Center Commercial La Croisee, Clapiers, France; Dermatologie, Clinique St. Jean du Languedoc, Toulouse, France; Parc Euromedicine, Grahels, France ; Center Jean Louis Alibert, Institut de Recherche Pierre Fahre, Toulouse, France; UPRES EA 2689, INSERM IFR22, Lille, France
Journal: Dermatologic surgery, 2001, 27 (9) 799-806
ISSN: 1076-0512 Availability: INIST-17417; 354000099193910050
No. of Refs.: 41 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English

BACKGROUND. Nonablative remodeling has been recently proposed as an alternative to CO SUB 2 and Er:YAG resurfacing. OBJECTIVE. To evaluate the efficacy and safety of a 1540 nm Er:glass **laser** with contact cooling in

nonablative **skin remodeling** , focused on perioral and periorbital rhytides. METHODS. Sixty patients (mean age 47 years), Fitzpatrick skin types I-IV were treated four times over 6-week intervals. Patients were evaluated using digital photographs, histology, ultrasound imaging, and profilometry with silicone imprints in order to quantitate the degree of clinical improvement. RESULTS. All subjects reported subjective improvement in the quality and visual aspect of their skin. This was confirmed by a 40.2% reduction of anisotropy (P <.001) 6 weeks after the fourth treatment. Ultrasound imaging demonstrated a 17% increase of dermis thickness (P <.005). Biopsy specimens showed evidence of new **collagen** formation. CONCLUSION. This study has clearly demonstrated that irradiation with 1540 nm Er:glass laser can lead to new **collagen** formation, dermis thickening, reduction of anisotropy of the skin, and clinical improvements. The lack of adverse effects confirmed that this 1540 nm laser emitting in a pulsed mode coupled with an efficient cooling system is safe.

22/5/13 (Item 8 from file: 144)
DIALOG(R)File 144:Pascal

13728779 PASCAL No.: 98-0420470
Skin tightening **effects of the ultrapulse CO SUB 2** laser
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Journal: Plastic and reconstructive surgery : (1963), 1998, 102 (3) 872-877
ISSN: 0032-1052 Availability: INIST-11075; 354000070053000350
No. of Refs.: 16 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
This study analyzed the skin tightening or contracture effect of the Ultrapulse carbon dioxide (CO SUB 2) laser on the skin of hairless guinea pigs by light and electron microscopic, histologic, and tensiometric evaluations. Two 2 X 2 cm squares of back skin were precision tattooed on each of the animals in the study (n = 12). One square served as the control, and the other square was used as experimental skin. The experimental skin was treated with three passes of the CO SUB 2 laser at 500 mJ and 5 W using a 3-mm collimated handpiece. Skin specimens from three animals were analyzed at 1, 4, 8, and 12 weeks. After three passes, the length of the square was reduced by 27 percent, and the width was reduced by 40 percent. Over the next 12 weeks, as the animals grew, the dimensions of the control areas also increased. The laser-treated areas continued to maintain their contracted dimensions, however. By the 12th week, the laser-treated areas were 28.35 percent shorter in length and 15.5 percent shorter in width than the control areas. Histologic examination demonstrated a significantly higher content of **collagen** in the reticular layer, which was more compact than that of the normal skin. Electron microscopy revealed that the laser had induced shortening of the **collagen** fibers (7.45 percent; p= 0.026), which persisted beyond the 12th week. Laser treatment did not significantly alter the tensile strength of the skin, although, at the 8th week, the treated areas had a slightly higher tensile strength.

22/5/15 (Item 10 from file: 144)
DIALOG(R)File 144:Pascal

13502670 PASCAL No.: 98-0200808
Collagen **shrinkage (selective dermaplasty) with the high-energy pulsed carbon dioxide laser**
Laser surgery
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Journal: Dermatologic surgery, 1998, 24 (1) 37-41
ISSN: 1076-0512 Availability: INIST-17417; 354000078309470050
No. of Refs.: 7 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United States
Language: English
BACKGROUND. The high-energy pulsed carbon dioxide (CO SUB 2) laser has proven useful for skin resurfacing. The modality can be less penetrating than chemical peels and more accurate than dermabrasion. OBJECTIVE. To demonstrate the additional benefit of dermal remodeling (selective dermaplasty) of skin lesions, scars, grafts, folds, and eyelids. METHODS. The collimated and the computerized pattern generator handpieces were used with the high-energy pulsed CO SUB 2 laser at 250-350 mJ to remodel tissue. Usually three or four passes were adequate to vaporize tissue and shrink **collagen** . RESULTS. A rejuvenated earlobe, eyelid, or forehead was produced in a predictable fashion. The tissue irregularities of scars, dog-ears, or trap-door deformities were reduced and **remodeled** . CONCLUSION. **Dermal remodeling** (selective dermaplasty) with the high-**energy** pulsed CO SUB 2 **laser** has proved a useful tool to **remodel** the **skin** . Areas such as the earlobe, the forehead, the eyelids, or skin lesions can be vaporized to develop a more youthful appearance. We find this a useful addition to the armamentarium of the cosmetic dermatologist.

22/5/17 (Item 12 from file: 144)
DIALOG(R)File 144:Pascal

13221649 PASCAL No.: 97-0488799
Histopathology of laser skin resurfacing : Cutaneous applications of lasers : dermatoly, plastic surgery, and tissue welding
Lasers in surgery : advacned characterization, therapeutics, and systems VII : San Jose CA, 8-9 February 1997
THOMSEN S; BALDWIN B; CHI E; ELLARD J; SCHWARTZ J
ANDERSON RRox, ed; BARTELS Kenneth E, ed; BASS Lawrence S, ed; GREGORY Kenton W, ed; HARRIS David M, ed; LUI Harvey, ed; MALEK Reza S, ed; MULLER Gerhard J, ed; PANKRATOV Michail M, ed; PERLMUTTER Aaron P, ed; REIDENBACH Hans-Dieter, ed; TATE Lloyd P, ed; WATSON Graham M, ed
U. Texas M. D. Anderson Cancer Center, Houston, TX 77030 , United States; Rice University, Houston, TX 77030, United States
International Society for Optical Engineering, Bellingham WA, United States.

Lasers in surgery : advanced characterization, therapeutics, and systems. Conference, 7 (San Jose CA USA) 1997-02-08
Journal: SPIE proceedings series, 1997, 2970 287-293
ISBN: 0-8194-2381-5 ISSN: 1017-2653 Availability: INIST-21760; 354000068084720380
No. of Refs.: 3 ref.
Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)
Country of Publication: United States
Language: English
Pulsed C02 laser skin resurfacing is a purportedly "non-thermal" procedure enjoying wide application as a cosmetic treatment for skin wrinkles. Treatment success has been based on clinical assessments of skin smoothness. Skin lesions (1 cm SUP 2) created by one, two or three superimposed C02 laser passes were placed on the backs of 28 "Fuzzy" Harlan Sprague Dawley rats. The variable laser irradiation parameters included measured energies ranging from 112 to 387/pulse with pulse widths of 65 and 125 mu s anda repetition rate of 8 Hz. The square, flat laser beam measured 3 mm SUP 2 at the focal point. The lesions were collected from 0 to 10 days after treatment for qualitative and quantitative histopathology. Thermal damage and treatment effect tended to increase in severity and, to a lesser extent, depth with increased delivery parameters. In acute lesions, the vacuolated and fragmented, desiccated and thermally coagulated epidermis was partially removed exposing the underlying thermally coagulated dermal **collagen** and cells. Epidermal and dermal necrosis and slough occured between 24 to 72 hours after treatment. Epithelial regeneration originated from the adnexa and the lesion edges. Dermal fibrous scar formation began at 5 days below the regenerated epidermis and became more prominent at 7 and 10 days.

25/5/3 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04367864 E.I. No: EIP96023021682
Title: Applications **and mechanisms of** laser **tissue welding in 1995: review**
Author: Godlewski, Guilhem M.D.; Prudhomme, Michel M.D.; Tang, Jing M.D.
Corporate Source: Univ. Montpellier I, Nimes, Fr
Conference Title: Medical Applications of Lasers III
Conference Location: Barcelona, Spain Conference Date: 19950912-19950916
Sponsor: SPIE - Int Soc for Opt Engineering, Bellingham, WA USA; EOS
E.I. Conference No.: 22463
Source: Proceedings of SPIE - The International Society for Optical Engineering v 2623 1996. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, USA. p 334-341
Publication Year: 1996
CODEN: PSISDG ISSN: 0277-786X ISBN: 0-8194-1987-7
Language: English
Document Type: CA; (Conference Article) Treatment: A; (Applications)
Journal Announcement: 9605W3
Abstract: For several years laser tissue welding has appeared as a new alternative technique for tissue repair instead of manual sutures. It has been evaluated in different experimental **models** including blood vessels,

skin , nerve, intestine, bile ducts, vas and fallopian tube. Different types of lasers with different sets of parameters have been used: carbon dioxide laser, Nd:YAG laser, argon and KTP laser and diode laser. Recent trends in tissue fusion promote near infrared lasers at low irradiance with intraoperative enhancement of light absorption by specific chromophores. As far as microvascular reconstruction is concerned, successful clinical applications are currently published. Although the molecular mechanism involved in welding is not completely understood, the tissular fusion is considered as a thermal phenomena. In laser assisted microvascular anastomosis, the best experimental model, the ultrastructural examination of arteries anastomosed with Nd:YAG, argon or diode laser revealed interdigitation of **collagen** fibers which appeared swollen, with modified striation and organized in irregular network. The mechanism of welding involving the formation of non covalent bands between **collagen** strands, is generally induced by a temperature of 60 - 63 degrees Celsius well adapted to **collagen** denaturation. 70 Refs.

25/5/7 (Item 3 from file: 144)

14010595 PASCAL No.: 99-0198114

CO SUB 2 laser physics and tissue interactions in skin

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Basic Science Section of the Annual Meeting of the American Society for Laser Medicine and Surgery (San Diego, California USA) 1998
Journal: Lasers in surgery and medicine, 1999, 24 (2) 113-121
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No. of Refs.: 11 ref.
Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)
Country of Publication: United States
Language: English

Background and Objectives: The theoretical model of CO SUB 2 laser tissue interaction appeared to be too simplistic. To explain the reactions seen in **skin** , a more complex **model** was needed. We hoped to correlate the clinical-histologic patterns of CO SUB 2 laser tissue interactions. Study Design/Materials and Methods: The Ultrapulse CO SUB 2 laser was used on normal and pathologic skin conditions, Clinical observations were correlated with histologic examinations of biopsies. Results: It was possible to demonstrate cavitation at the dermal-epidermal junction 2-3 diameters beyond the actual spot of CO SUB 2 **laser contact** with the skin. Dermal **heat** damage was seen as homogenization of **collagen** 1-2 diameters beyond the spot of **laser contact** . This flow of **energy** laterally at the dermal-epidermal junction and vertically down the skin follicles was both clinically beneficial and detrimental. Beneficially, superficial skin lesions separated at this junction and were easily removed. The heat coagulation of the dermis facilitated lesion removal without bleeding. The clinician had a better view of the pathology and could find focal zones of deeper pathology that could be easily re-treated. Detrimentally, this extended damage delayed wound healing and led to persistent erythema. Conclusion: These clinical-histologic correlations have provided a better understanding of CO SUB 2 laser tissue interactions in skin. It has been possible to take advantage of these findings to remove pathologic skin conditions more efficiently.

29/5/1 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

05980016 JICST ACCESSION NUMBER: 05A0069291 FILE SEGMENT: JICST-E
NON-SURGICAL SKIN TIGHTENING **USING** RADIOFREQUENCY
SHIMBASHI TAKESHI (1)
(1) Shimbashisekeigekakurinikku
Nippon Biyo Geka Gakkai Kaiho(Journal of Japan Society of Aesthetic Plastic Surgery), 2004, VOL.26,NO.4, PAGE.169-176, FIG.9, TBL.6, REF.12
JOURNAL NUMBER: S0719BAW ISSN NO: 0288-2027
UNIVERSAL DECIMAL CLASSIFICATION: 616.5-08
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ARTICLE TYPE: Commentary
MEDIA TYPE: Printed Publication
ABSTRACT: ThermaCoolTC is a radiofrequency device which delivers RF energy to the deep dermis and subcutaneous layers in a controlled volumetric manner. The **epidermis** is protected by the **contact** cooling system. The device creates uniform and sustained volumetric heating in the dermis and **collagen** contraction and remodeling. This is a new approach to nonsurgical face lifting. The updated treatment algorithm to achieve a three-dimensional skin tightening consists of first XY passes, additional XY passes and final Z passes with multiple passes and low joules. The tissue tightening effect is obvious within one month and advances during the first six months. Multiple passes and multiple treatments tend to produce better results. (author abst.)
DESCRIPTORS: skin(animal tissue); high frequency therapy; safety; **collagen**; wrinkle
IDENTIFIERS: non-invasive; ThermaCool
BROADER DESCRIPTORS: epithelial tissue; animal tissue; biomedical tissue; organization; physical therapy; therapy; property; scleroprotein; animal protein; protein; morphology
CLASSIFICATION CODE(S): GF05010P

29/5/2 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

13222352 PASCAL No.: 97-0489513
In vivo argon laser vascular welding using thermal feedback : open and closed loop patency and collagen **crosslinking** : Cutaneous applications **of lasers** : dermatoly , **plastic surgery, and tissue welding**
Lasers in surgery : advacned characterization, therapeutics, and systems VII : San Jose CA, 8-9 February 1997
SMALL W IV; CELLIERS P M; KOPCHOK G E; REISER K M; HEREDIA N J; MAITLAND D J; EDER D C; LONDON R A; HEILBRON M; HUSSAIN F; WHITE R A; DA SILVA L B; MATTHEWS D L
ANDERSON RRox, ed; BARTELS Kenneth E, ed; BASS Lawrence S, ed; GREGORY Kenton W, ed; HARRIS David M, ed; LUI Harvey, ed; MALEK Reza S, ed; MULLER Gerhard J, ed; PANKRATOV Michail M, ed; PERLMUTTER Aaron P, ed; REIDENBACH Hans-Dieter, ed; TATE Lloyd P, ed; WATSON Graham M, ed
Lawrence Livermore National Laboratory, L-399, P.O. Box 808, Livermore,

CA 94550 , United States; Division of Vascular Surgery, Harbor-UCLA Medical Center, Torrance, CA 90509 , United States; Department of Internal Medicine, School of Medicine, University of California, Davis, CA 95616 , United States

International Society for Optical Engineering, Bellingham WA, United States.

Lasers in surgery : advanced characterization, therapeutics, and systems. Conference, 7 (San Jose CA USA) 1997-02-08

Journal: SPIE proceedings series, 1997, 2970 252-256

ISBN: 0-8194-2381-5 ISSN: 1017-2653 Availability: INIST-21760; 354000068084720330

No. of Refs.: 13 ref.

Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)

Country of Publication: United States

Language: English

An in vivo study of vascular welding with a fiber-delivered argon **laser** was conducted using a canine **model** . Longitudinal arteriotomies and venotomies were treated on femoral vein and artery. Laser energy was delivered to the vessel wall via a 400 mu m optical fiber. The surface temperature at the center of the laser spot was monitored in real time using a hollow glass optical fiber-based two-color infrared thermometer. The surface temperature was limited by either a room-temperature saline drip or direct feedback control of the laser using a mechanical shutter to alternately pass and block the laser. Acute patency was evaluated either visually (leak/no leak) or by in vivo burst pressure measurements. Biochemical assays were performed to investigate the possible laser-induced formation or destruction of enzymatically mediated covalent crosslinks between **collagen** molecules. Viable welds were created both with and without the use of feedback control. Tissues maintained at 50 Degree C using feedback control had an elevated crosslink count compared to controls, while those irradiated without feedback control experienced a decrease. Differences between the volumetric heating associated with open and closed loop protocols may account for the different effects on **collagen** crosslinks. Covalent mechanisms may play a role in argon laser vascular fusion.

?

NPL Full-Text Database Search

Search Strategy

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Set     Items   Description
S1    4916088   ENERGY OR ENERGIES OR RADIOFREQUENC? OR RADIO()FREQUENC? OR
               ULTRASO? OR ULTRA()(SONIC? OR SOUND?) OR LASER? OR ELECTROMA-
              GNET? OR ELECTRO()MAGNET? OR INFRARED? OR THERMAL? OR HEAT???
S2    6378595   RESHAP? OR RECONTOUR? OR CONVEX? OR SHAPE? ? OR SHAPING? OR
               CONTOUR? OR MODEL???? OR REMODEL? OR REFORM? OR SCULPT? OR R-
              ESCULPT?
S3     245480   TIGHTEN?
S4     548748   SKIN OR DERMIS OR DERMAL OR EPIDERM? OR DERMATOL? OR CUTAN-
              EOUS?
S5     470143   ORGAN? ? OR TISSUE? ?
S6      33746   COLLAGEN?
S7    8338533   PRESSUR? OR PRESS OR PRESSE? ? OR PRESSING? OR FORCE? ? OR
              COMPRESS?
S8   12635431   CONTACT??? OR TOUCH??? OR APPLY? OR APPLIE? OR APPLICATION?
S9     293361   S1 (5N) S7:S8
S10     16689   S2:S3(5N)S4:S5
S11      1157   S2:S3(5N)S6
S12         6   S9(S)S10(S)S11
S13         4   RD  (unique items)
S14       133   S1(S)S10(S)S11
S15        47   S14 NOT (S12 OR PY=2003:2006)
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S17        20   S9(S)S10(S)S6
S18         9   S9(S)S11(S)S4:S5
S19         8   S17:S18 NOT (S12 OR S15 OR PY=2003:2006)
S20         6   RD  (unique items)
S21      1243   S1(5N)S2:S3(5N)S4:S5
S22       207   S21 (S)S6
S23       160   S21(10N)S6
S24        24   S23 NOT (S12 OR S15 OR S19 OR PY=2003:2006)
S25        18   RD  (unique items)

File   9:Business & Industry(R) Jul/1994-2006/Jun 07
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         (c) 2006 ESPICOM Bus.Intell.
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File 484:Periodical Abs Plustext 1986-2006/Jun W1
(c) 2006 ProQuest

Search Results

16/3,K/2 (Item 2 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
(c) 2006 The Gale Group. All rts. reserv.

02420102 Supplier Number: 24774213 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Smoothbeam puts wrinkle removal in hands of primary-care physicians (Candela develops Smoothbeam, diode-laser-based nonablative skin "remodeling" system that weighs under 40 lb)
Laser Focus World, v 37, n 3, p 79
March 2001
DOCUMENT TYPE: Journal ISSN: 1043-8092 (United States)
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 583

(USE FORMAT 7 OR 9 FOR FULLTEXT)

TEXT:
...Candela claims the wavelength also offers clinical advantages. The company has dubbed the Smoothbeam approach " **laser** -assisted **skin** renewal" for **collagen remodeling** . The 1450-nm wavelength **heats** the upper dermis, inducing mild **thermal** injury but not removing any layers of skin. Instead, the body's natural healing response initiates **collagen remodeling** and the deposition of new, "organized" collagen, smoothing fine wrinkles from the inside out.
Candela...

16/3,K/3 (Item 3 from file: 9)
DIALOG(R)File 9:Business & Industry(R)
(c) 2006 The Gale Group. All rts. reserv.

02026531 Supplier Number: 25483317 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Collagen generation
(The role of aesthetic medicine is expanding due to aging baby boomers; 2.8 mil nonsurgical and cosmetic procedures were performed by physicians in 1998)
Med Ad News, v 18, n 11, p 54+
November 1999
DOCUMENT TYPE: Journal ISSN: 0745-0907 (United States)
LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 1670

(USE FORMAT 7 OR 9 FOR FULLTEXT)

TEXT:
...The technique uses cold electrical energy instead of heating the skin, as lasers do.

Nonablative **lasers** work beneath the surface skin layer to stimulate **collagen** growth. The procedure **tightens** underlying **skin** to remove fine lines with fewer side effects and faster healing than traditional **laser** therapy.
Microdermabrasion is a kind of dermatological sand-blasting. Small microparticles are used to abrade...

16/3,K/6 (Item 3 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

10069349 Supplier Number: 84352279 (USE FORMAT 7 FOR FULLTEXT)
Nonablative laser features dynamic cooling technology.
Dermatology Times, v23, n1, p67
Jan, 2002
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 164

Smoothbeam's LASR (**Laser** Assisted Skin Renewal) process offers proprietary Candela technology for **collagen remodeling** . Its wavelength **heats** the upper **dermis** , inducing a mild **thermal** injury. The body's natural healing response initiates **collagen remodeling** and the deposition of new, organized collagen.
The laser features Candela's integrated Dynamic Cooling...

16/3,K/7 (Item 4 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

10069310 Supplier Number: 84352239 (USE FORMAT 7 FOR FULLTEXT)
Scatter-limited phototherapy contracts tissue.
GUTTMAN, CHERYL
Dermatology Times, v23, n1, p46
Jan, 2002
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 786

... of the skin, and an optimized exposure time to limit penetration depth and achieve controlled **energy** delivery to the **dermis** for stimulating **collagen remodeling** . Based on predictive **modeling** , a prototype device has been developed using a 1064-nm Nd:YAG **laser** with a 0.4-mm optical fiber for light delivery and a cold sapphire window...

16/3,K/9 (Item 6 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

09761684 Supplier Number: 85501078 (USE FORMAT 7 FOR FULLTEXT)
Nonablative vs. ablative: Each has benefits -- Decision to use still-strong ablative techniques depends largely on patient types seen.
WILSON, FRED

Dermatology Times, v23, n3, p66
March, 2002
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 775

... formation and improve telangiectasia associated with chronic photodamage, Dr. Kauvar recommended using a pulsed dye **laser** or an intense pulse light source. "The intense pulse light source, which uses filters to...

...and skin texture," she said. "When the 500- to 800-nm wavelengths are used, the **energy** is absorbed by epidermal melanin and dermal hemoglobin, leading to improvement in pigmentation and telangiectasia. When the light is adjusted to deliver more **infrared** , the **energy** is nonspecifically absorbed by water in the dermis, resulting in a microscopic wound-healing response with activation of fibroblasts, production of **collagen** , and **remodeling** , which improve **skin** texture."

Lasers used in combination have also produced favorable results. "The pulsed Nd:YAG laser...

16/3,K/10 (Item 7 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

08886457 Supplier Number: 77060818 (USE FORMAT 7 FOR FULLTEXT)
Urologists turn to laparoscopy, robots ... and stem cells.(First to use endoscopes)(Brief Article)
DRAKE, CYNTHIA
The BBI Newsletter, v24, n8, p190
August, 2001
Language: English Record Type: Fulltext
Article Type: Brief Article
Document Type: Newsletter; Trade
Word Count: 2404

... as possible ways to treat SUI. The SURx (Pleasanton, California) solution uses low power, bipolar **radio frequency energy** to treat the pelvic floor and surrounding tissue in a minimally invasive outpatient procedure. **Heated** tissue shrinks due to **heat** 's effect on **collagen** . The resulting shrinkage **tightens** the previously lax **tissue** in the pelvic floor lifting the bladder neck to a more anatomically correct position. Studies...

16/3,K/11 (Item 8 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

08816880 Supplier Number: 76623654 (USE FORMAT 7 FOR FULLTEXT)
The First Non-Laser Vision Correction Procedure to Eliminate Reading Glasses Approved for FDA Clinical Trials.
PR Newswire, pNA
July 19, 2001
Language: English Record Type: Fulltext
Document Type: Newswire; Trade

Word Count: 503

... System, which is manufactured by Refractec, a medical technology and research firm. The device uses **radio frequency energy** to shrink **collagen tissue** within the cornea, thus **reshaping** it. The ViewPoint CK System is already approved in most major international markets. In the ...

16/3,K/12 (Item 9 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

06762566 Supplier Number: 56954707 (USE FORMAT 7 FOR FULLTEXT)
American Academy of Dermatology: Latest Treatments Help Erase the Cosmetic And Psychological Scars of Acne.
PR Newswire, p0581
Oct 27, 1999
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 968

... usually three to five days -- with a shorter duration of post-surgery redness.

The CO2 **laser** works well for elevating depressed scars that give the skin a crater-like appearance. Since the CO2 **laser** produces more **heat** than the Erbium:YAG **laser** , it allows the **energy** emitted to penetrate deeper into the **skin** and **tighten** the **skin** 's **collagen** fibers. By **tightening** the **collagen** fibers, the CO2 **laser** causes the depressed scars to elevate and normalize in appearance. In most cases, only one treatment is required to produce permanent results with either the Erbium:YAG or CO2 **laser** .

Autologous fat transfer, which involves harvesting a patient's own fat from another part of...

16/3,K/16 (Item 4 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

05866479 SUPPLIER NUMBER: 12115194 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Will corneal sculpting with excimer lasers eliminate eyeglasses. (includes related article on effects on tissue of lasers)
Arons, Irving J.
Laser Focus World, v28, n3, p53(7)
March, 1992
ISSN: 0740-2511 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 3033 LINE COUNT: 00245

... 01-0.5 J/pulse, within the stroma to obtain selected, controlled shrinkage of the **collagen tissue** and achieve corneal- **shape** changes. To date, only animal studies have been conducted, but the idea of working within...

...rather than on its surface, thus eliminating the surface-wound response problems of the excimer **laser** , is intriguing.

Summit is also conducting human clinical trials of laser

thermokerato-plasty with its...

16/3,K/17 (Item 1 from file: 441)
DIALOG(R)File 441:ESPICOM Pharm&Med DEVICE NEWS
(c) 2006 ESPICOM Bus.Intell. All rts. reserv.

00048094 00051985 (USE FORMAT 7 OR 9 FOR FULLTEXT)

FDA clears new treatment for periorbital wrinkles and rhytids

Medical Industry Week
14 November 2002 (20021114)
RECORD TYPE: FULLTEXT WORD COUNT: 334

COMPANY: Thermage

(THIS IS THE FULLTEXT)

TEXT:
...tightening of periorbital facial tissue.
The Thermage procedure works by delivering a volumetric and uniform **heating** effect to the deep dermis through the use of **radiofrequency energy** . The procedure is intended to cause immediate **collagen** contraction followed by gradual collagen **tightening** to lift **skin** without wounding the epidermis. Simultaneously a cryogen spray cools the skin's surface before, during and after each **radiofrequency** pulse to further protect the epidermis.
In clinical trials to evaluate the facial tissue effects...

16/3,K/18 (Item 2 from file: 441)
DIALOG(R)File 441:ESPICOM Pharm&Med DEVICE NEWS
(c) 2006 ESPICOM Bus.Intell. All rts. reserv.

00036042 00039671 (USE FORMAT 7 OR 9 FOR FULLTEXT)

New skin renewal laser released by Candela - (29/01/2001)

Medical Industry Week
9 February 2001 (20010209)
RECORD TYPE: FULLTEXT WORD COUNT: 101

COMPANY: Candela

(THIS IS THE FULLTEXT)

TEXT:
...at the International Master Course on Ageing Skin (IMCAS) in Paris, France.
Smoothbeam's LASR (**Laser** Assisted Skin Renewal) process includes proprietary Candela technology for **collagen remodelling** . Its wavelength **heats** the upper **dermis** , inducing a mild **thermal** injury. The body's natural healing response initiates **collagen remodelling** and the deposition of new, organised collagen. The product also features Candela's integrated Dynamic Cooling Device (DCD), which cools and protects the epidermis prior to, during and post **laser** exposure. DCD automates the

delivery of cryogen to localise **thermal** injury to the upper dermis.

16/3,K/19 (Item 3 from file: 441)
DIALOG(R)File 441:ESPICOM Pharm&Med DEVICE NEWS

00035337 00038966 (USE FORMAT 7 OR 9 FOR FULLTEXT)

New skin renewal laser released by Candela

Medical Industry Week
15 January 2001 (20010115)
RECORD TYPE: FULLTEXT WORD COUNT: 101

COMPANY: Candela

(THIS IS THE FULLTEXT)

TEXT:
...at the International Master Course on Ageing Skin (IMCAS) in Paris, France.
Smoothbeam's LASR (**Laser** Assisted Skin Renewal) process includes proprietary Candela technology for **collagen remodelling** . Its wavelength **heats** the upper **dermis** , inducing a mild **thermal** injury. The body's natural healing response initiates **collagen remodelling** and the deposition of new, organised collagen. The product also features Candela's integrated Dynamic Cooling Device (DCD), which cools and protects the epidermis prior to, during and post **laser** exposure. DCD automates the delivery of cryogen to localise **thermal** injury to the upper dermis.

16/3,K/20 (Item 1 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01991178 SUPPLIER NUMBER: 74438727 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Skin Rejuvenation with Cool Touch 1320 nm Nd:YAG Laser: The Nurse's Role.
Romero, Patti; Alster, Tina S.
Dermatology Nursing, 13, 2, 122
April,
2001
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 1060-3441
LANGUAGE: English RECORD TYPE: Fulltext; Abstract TARGET AUDIENCE: Professional
WORD COUNT: 1720 LINE COUNT: 00152

TEXT:
...skin care, often further intervention becomes necessary. Ablative skin resurfacing with carbon dioxide and erbium **lasers** were introduced in the early 1990s in an attempt to improve upon the limitations of surgical procedures, namely to impart **skin** rejuvenation through epidermal vaporization, **collagen tightening** , and **dermal remodeling** , rather than through simple redraping of skin.

16/3,K/21 (Item 2 from file: 149)

DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01879516 SUPPLIER NUMBER: 58398215 (USE FORMAT 7 OR 9 FOR FULL TEXT)
COSMETIC SURGERY NEWS.
Franz, Rachel
Dermatology Nursing, 11, 6, 451
Dec,
1999
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 1060-3441
LANGUAGE: English RECORD TYPE: Fulltext; Abstract TARGET AUDIENCE: Professional
WORD COUNT: 2673 LINE COUNT: 00222

... usually 3 to 5 days -- with a shorter duration of post-surgery redness.

The CO2 **laser** works well for elevating depressed scars that give the skin a crater-like appearance. Since the CO2 **laser** produces more **heat** than the Erbium:YAG **laser** , it allows the **energy** emitted to penetrate deeper into the **skin** and **tighten** the **skin** 's **collagen** fibers. By **tightening** the **collagen** fibers, the CO2 **laser** causes the depressed scars to elevate and normalize in appearance. In most cases, only one treatment is required to produce permanent results with either the Erbium: YAG or CO2 **laser** .

Autologous fat transfer, which involves harvesting a patient's own fat from another part of...

16/3,K/22 (Item 3 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01844570 SUPPLIER NUMBER: 55017400 (USE FORMAT 7 OR 9 FOR FULL TEXT)
SKIN TREATMENT NEWS.
Franz, Rachel

Dermatology Nursing, 11, 3, 214
June,
1999
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 1060-3441
LANGUAGE: English RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 862 LINE COUNT: 00077

... technique involves using a cryogen cooling system spray that protects the epidermis during non-ablative **laser** treatment, allowing it to be spared from **heat** damage or injury. The dermis, on the other hand, absorbs the **heat** of the Nd:YAG **laser** light but without any accompanying tissue removal or skin sloughing. The controlled **thermal** effect at the deeper layers of the **dermis** stimulates new **collagen** formation and **tightens** the underlying **skin** , improving fine lines and loose skin without inducing a superficial burn or skin injury.

According...

16/3,K/23 (Item 4 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01835422 SUPPLIER NUMBER: 54699707 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Histologic and Clinical Evaluation of Combined Eyelid Erbium:YAG and (CO.sub.2) Laser Resurfacing.
Millman, Arthur L.; Mannor, Geva E.
American Journal of Ophthalmology, 127, 5, 614
May,
1999
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 0002-9394
LANGUAGE: English RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 946 LINE COUNT: 00083

... retarding the cellular repair mechanism.
(Figures 1&2 ILLUSTRATION OMITTED)
The exact mechanism of the **collagen remodeling** necessary for **skin tightening** and wrinkle reduction is unknown.(1-4) Postlaser morbidity is clearly proportional to the amount of **laser** -induced **thermal** damage.(1-5) The ideal resurfacing protocol should achieve cosmetic improvement while minimizing morbidity. This protocol limits the **thermal** damage caused by the (CO.sub.2) **laser** by using it only to ablate and **remodel** the **dermis** to obtain a satisfactory cosmetic outcome. The Erbium:YAG **laser** is used to ablate the epidermis because it produces much less collateral **thermal** damage than the (CO.sub.2) **laser** . The different biophysical properties of these two **lasers** are combined to maximize their relative advantages while minimizing their relative disadvantages.
REFERENCES
(1.) Hruza...

16/3,K/24 (Item 5 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01802272 SUPPLIER NUMBER: 21237340 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Complications of cutaneous laser resurfacing: a nursing guide.
Formica, Karin; Alster, Tina S.
Dermatology Nursing, v10, n5, p353(4)
Oct,
1998
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 1060-3441
LANGUAGE: English RECORD TYPE: Fulltext; Abstract TARGET AUDIENCE: Professional
WORD COUNT: 1558 LINE COUNT: 00160

... This bloodless procedure has virtually replaced procedures such as deep chemical peels and dermabrasion. The **heat** generated by the **laser** in the **tissue** stimulates **collagen** contraction and **remodeling** , resulting in **skin tightening** . When appropriate **laser** technique and postoperative management are practiced, the development of significant side effects and complications is...

16/3,K/25 (Item 6 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01802257 SUPPLIER NUMBER: 21235961 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Lasers for removing unwanted hair and rejuvenating skin.(Epitomes: Important Advances in Dermatology)
Wheeland, Ronald G.
The Western Journal of Medicine, v169, n4, p228(2)
Oct,
1998
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 0093-0415
LANGUAGE: English RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 853 LINE COUNT: 00073

... or aged skin have been radically changed by the recent introduction of short-pulsed, high- **energy** carbon dioxide **lasers** . These devices precisely remove the solar damaged **epidermis** and dermis, **tighten collagen** , and greatly improve the appearance of most patients. However, reports of prolonged erythema, occasional scarring...

...reduced the acceptance of this technique and led to the introduction of the erbium:YAG **laser** for skin rejuvenation. The high coefficient of absorption by water for the erbium:YAG **laser** greatly minimizes the amount of unwanted collateral **thermal** injury, speeds healing time and reduces postoperative erythema. The erbium:YAG **laser** technique is generally most useful for younger patients or those individuals with early signs of...

...single treatment session to achieve the same depth of ablation as with the carbon dioxide **laser** . However, reduction in side effects with this **laser** system make it a welcome addition to the techniques used in treating sun-damaged or aged skin. The cost of performing **laser** skin resurfacing is generally similar or slightly higher than the cost associated with the older...

16/3,K/26 (Item 7 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
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01771402 SUPPLIER NUMBER: 20149742 (USE FORMAT 7 OR 9 FOR FULL TEXT)
The new face of cosmetic surgery; aging boomer spend big to shed their wrinkles. (includes related article on surgeon selection)
Better Homes and Gardens, v76, n2, p52(5)
Feb,
1998
PUBLICATION FORMAT: Magazine/Journal ISSN: 0006-0151 LANGUAGE: English
RECORD TYPE: Fulltext TARGET AUDIENCE: Consumer
WORD COUNT: 2997 LINE COUNT: 00242

... takes aim at the bane of most baby boomers: leathery, sun-damaged skin and wrinkles.
Laser resurfacing uses a carbon dioxide **laser** to vaporize top skin layers, allowing new, firmer, smoother skin to emerge. The **laser** 's extremely high- **energy** light triggers the growth of **collagen** , **tightening tissue** moderately as it smooths out bothersome crow's-feet, "smoker's lines," and light brown...

16/3,K/28 (Item 9 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)
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01682380 SUPPLIER NUMBER: 19245970 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Cutaneous laser resurfacing: a nursing guide.
Formica, Karin; Alster, Tina S.
Dermatology Nursing, v9, n1, p19(4)
Feb,
1997
PUBLICATION FORMAT: Magazine/Journal ISSN: 1060-3441 LANGUAGE: English
RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 2044 LINE COUNT: 00181

... Atrophic Scars

Acne
Trauma
Surgery

Epidermal Lesions

Keratoses
Verruca (warts)

Other

Actinic cheilitis
Xanthelasma

Successful **laser** resurfacing relies on precise vaporization and removal of the top layers of skin. The **heat** generated by the **laser** also stimulates **collagen** contraction and **remodeling** , resulting in a **tightening** of the **skin** . In the past, procedures used to treat such cutaneous lesions included chemical peels, . dermabrasion, and...

...excisions. Several reports have confirmed the effectiveness and safety of pulsed (CO.sub.2) cutaneous **laser** resurfacing (Alster, 1996a; Alster & Garg, 1996; Fitzpatrick et al., 1996; Waldorf et al., 1995). Superficial...

16/3,K/29 (Item 10 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01635455 SUPPLIER NUMBER: 18580025 (USE FORMAT 7 OR 9 FOR FULL TEXT)
The doctor's guide to skin. (skin problems and treatments; includes related article on new treatments that can make skin look younger)
Hales, Dianne
Ladies Home Journal, v113, n9, p138(3)
Sep,
1996
PUBLICATION FORMAT: Magazine/Journal ISSN: 0023-7124 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract TARGET AUDIENCE: Consumer
WORD COUNT: 1326 LINE COUNT: 00111

... but several new treatments provide ways of looking young longer.
SKIN-SMOOTHING LASERS
"Carbon-dioxide **lasers** are elegant tools that plane away the superficial levels of the skin," says Richard Glogau, M.D., clinical

professor of dermatology at the University of California, San Francisco. The **laser** vaporizes **skin** cells and **tightens** **collagen** to create a smoother facial appearance.

In addition to cost (51,000 and up! depending...

16/3,K/30 (Item 11 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01630828 SUPPLIER NUMBER: 18549112 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Rhytides - new approaches to old wrinkles.
Fuciarelli, Kevin; Levine, Norman
The Western Journal of Medicine, v164, n6, p517(2)
June,
1996
PUBLICATION FORMAT: Magazine/Journal ISSN: 0093-0415 LANGUAGE: English
RECORD TYPE: Fulltext TARGET AUDIENCE: Professional
WORD COUNT: 873 LINE COUNT: 00078

... skin texture, and enlarged facial pores are possible problems with dermabrasion.

The resurfacing carbon dioxide **laser** is now being extensively used to treat mild to moderate facial rhytides. As with chemical peels and dermabrasion, carbon dioxide **laser** surgery uses the mechanisms of epidermal and **dermal** regeneration and **collagen** and elastin **remodeling** . The result is a smoothing of superficial irregularities, including fine lines and wrinkles. It has been suggested that the carbon dioxide **laser** optimizes its clinical results by inducing collagen and elastin shrinkage through its **thermal** effect. The carbon dioxide **laser** allows for more precise depth control and is bloodless compared with dermabrasion. A new generation of carbon dioxide **lasers** has led to a reduction of undesirable results such as substantial **thermal** injury and scarring associated with conventional continuous-wave carbon dioxide **lasers** . Hyperpigmentation and hypertrophic scarring are possible complications of **laser** resurfacing.

REFERENCES

Fitzpatrick RE Goldman MP Advances in carbon dioxide laser surgery. Clin Dermatol 1995...

16/3,K/32 (Item 1 from file: 624)
DIALOG(R)File 624:McGraw-Hill Publications

00889911
ZAPPING YOUR WAY TO A YOUNGER-LOOKING FACE
By Lisa Sanders
Business Week, Number 3550, Pg 162E2
October 27, 1997
JOURNAL CODE: BW
SECTION HEADING: Personal Business: HEALTH SKIN ISSN: 0007-7135
WORD COUNT: 1,492

TEXT:

...to erase crow's feet and lip-area wrinkles.

The redness and swelling from the **heat** is painful enough so that most doctors administer a local anesthetic to minimize discomfort. But the **heat** is a key part of the treatment. For reasons not completely understood, **heat** **tightens** **skin** and stimulates **collagen** production for up to a year after a procedure. As the top two layers of skin grow back, they appear younger-looking and less wrinkled. Erbium YAG **lasers** cause less pain and burning, which means less post-procedure redness. One drawback: Skin doesn't grow back quite as tightly and smooth as with a CO2 **laser** . Another notable difference is that CO2 **lasers** have been around longer, so more is known about possible long-term side-effects, such...

... Short-term problems, such as infection or burning, are less frequent than with the CO2 **lasers** , though.

As both types of lasers are relatively new, few doctors have

16/3,K/33 (Item 1 from file: 47)
DIALOG(R)File 47:Gale Group Magazine DB(TM)
(c) 2006 The Gale group. All rts. reserv.

05329344 SUPPLIER NUMBER: 54099628 (USE FORMAT 7 OR 9 FOR FULL TEXT)
SURGERY, FROM HEAD TO TOE.(cosmetic surgery)
LAURENCE, LESLIE
Town & Country Monthly, 153, 5226, 145(1)
March, 1999
ISSN: 0040-9952 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 9137 LINE COUNT: 00695

... SOLUTION Resurfacing, performed with a carbon dioxide or an erbium: YAG laser.
PROCEDURE Holding the **laser** like a pen, the doctor makes several passes around each eye. Each swipe of the **laser** delivers bursts of invisible **heat** waves that induce a superficial second-degree burn, which causes the epidermis, or outermost layer...

...to slough off. Over time, the dermis, or innermost layer, creates a new wrinkle-free **epidermis** . The **laser** 's **heat** also **tightens** the **skin** , perhaps by making **collagen** fibers shrink or by stimulating the growth of new collagen, the elastic tissue that keeps...

16/3,K/35 (Item 1 from file: 484)
DIALOG(R)File 484:Periodical Abs Plustext
(c) 2006 ProQuest. All rts. reserv.

04173296 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Surgery, from head to toe
Laurence, Leslie
Town & Country Monthly (ITNC), v153 n5226, p145-154, p.10
Mar 1999
ISSN: 0040-9952 JOURNAL CODE: ITNC
DOCUMENT TYPE: Feature
LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 8574

TEXT:

... SOLUTION Resurfacing, performed with a carbon dioxide or an erbium: YAG laser.
PROCEDURE Holding the **laser** like a pen, the doctor makes several passes around each eye. Each swipe of the **laser** delivers bursts of invisible **heat** waves that induce a superficial seconddegree burn, which causes the epidermis, or outermost layer of...

...to slough off. Over time, the dermis, or innermost layer; creates a new wrinkle-free **epidermis** . The **laser** 's **heat** also **tightens** the **skin** , perhaps by making **collagen** fibers shrink or by stimulating the growth of new collagen, the elastic tissue that keeps...

20/3,K/1 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

07811514 Supplier Number: 65253266 (USE FORMAT 7 FOR FULLTEXT)
First Webcast of Breakthrough SUNRISE LTK Procedure to Broadcast On Wednesday, September 27, 2000; Live Chat With Doctor and Patient to Follow.
Business Wire, p0573
Sept 14, 2000
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 990

... Procedure.
The SUNRISE LTK(TM) Procedure uses laser energy to gently reshape the cornea without **touching** the eye. A holmium:YAG **laser** utilizing a patented process for shrinking collagen applies two concentric rings of eight simultaneous spots...

...visually important center of the cornea that you see through) to gently heat the corneal **collagen** and steepen its **shape** , thereby improving its refractive (focusing) power. Because no **tissue** is cut and the eye is not touched by any instruments, the possibility of intra...

20/3,K/4 (Item 1 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01796014 SUPPLIER NUMBER: 21164021 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Facial rejuvenation: use of a teaching model in care planning.
LeRoy, Laura
Dermatology Nursing, v10, n4, p269(5)
August,
1998
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 1060-3441
LANGUAGE: English RECORD TYPE: Fulltext; Abstract TARGET AUDIENCE: Professional
WORD COUNT: 2634 LINE COUNT: 00268

... tissue that contains nerve and blood vessels.
When a high-energy pulsed (CO.sub.2) **laser** is **applied** to tissue, the ensuing **thermal** effect shrinks the **collagen** strands by one-third

causing the **skin** to **tighten** and smooth (Kincade, 1995). The advantages of the (CO.sub.2) laser include results that are predictable and reproducible. Laser resurfacing also has a **tightening** effect on facial **skin** , enhancing the overall results (LeRoy, 1997). Although these skin rejuvenation techniques have excellent results for...

20/3,K/5 (Item 2 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01707337 SUPPLIER NUMBER: 19600700 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Laser resurfacing: the nurse's role.
LeRoy, Laura
Dermatology Nursing, v9, n3, p173(3)
June,
1997
PUBLICATION FORMAT: Magazine/Journal; Refereed ISSN: 1060-3441
LANGUAGE: English RECORD TYPE: Fulltext; Abstract TARGET AUDIENCE: Professional
WORD COUNT: 1848 LINE COUNT: 00158

... sheeting, and semipermeable dressings.
It is important to note the laser's thermal effect on **collagen** , a protein that is responsible for the skin's resiliency, according to Brooke Seckel, MD...

...School in Boston. Studies have shown that when a high-energy pulsed (CO.sub.2) **laser** is **applied** to tissue, the ensuing **thermal** effect shrinks the **collagen** strands by one-third causing the **skin** to **tighten** and smooth (Kincade, 1995). The net effect is a combined laser-induced and natural remolding of the outer layer of the **skin** .
This **tightening** is an additional cosmetic benefit of laser resurfacing, along with increased smoothness and more even...

25/3,K/5 (Item 3 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

08224538 Supplier Number: 69254230 (USE FORMAT 7 FOR FULLTEXT)
Candela to Introduce a Breakthrough Wrinkle Reduction Laser At Japanese Symposium.
Business Wire, p2475
Jan 17, 2001
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 818

... renewal services to their patients.
--New Technology: Not a rejuvenation product, Smoothbeam's LASR(TM) (**laser** assisted **skin** renewal) process is a completely new technology for **collagen** **remodeling** . The unique 1450 nm wavelength selectively **heats** the upper **dermis** , inducing a mild thermal injury. The body's natural healing response initiates collagen remodeling and...

25/3,K/6 (Item 4 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

08192825 Supplier Number: 68761944 (USE FORMAT 7 FOR FULLTEXT)
Candela Introduces Smoothbeam Skin Renewal Laser At IMCAS; Presentation of Diode Laser for Non-Ablative Dermal Remodeling.
Business Wire, p2242
Jan 5, 2001
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 676

... ablative skin renewal services to their patients at a fraction of the cost of competing **laser** systems."

Smoothbeam's unique LASR (**Laser** Assisted **Skin** Renewal) process offers proprietary Candela technology for **collagen** **remodeling** . Its unique wavelength **heats** the upper **dermis** , inducing a mild **thermal** injury. The body's natural healing response initiates **collagen** remodeling and the deposition of new, organized collagen.

Dr. Dilip Paithankar, Senior Scientist at Candela...

25/3,K/8 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

06231901 SUPPLIER NUMBER: 14351537 (USE FORMAT 7 OR 9 FOR FULL TEXT)
The eyes have it. (laser technology in eye surgery) (Lasers)
Kwidzinski, Therese A.
Lasers & Optronics, v11, n12, p21(2)
Nov, 1992
ISSN: 0892-9947 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1756 LINE COUNT: 00141

... laser produces an infrared beam that is delivered through a quartz fiber. The beam produces **heat** , which shrinks the **collagen** (a **tissue** protein) to change the **shape** of the cornea. Summit has received FDA approval for the Ho:YAG laser to be...

25/3,K/9 (Item 2 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

06230013 SUPPLIER NUMBER: 12765979 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Sunrise Technologies: too early for sunset? (Sunrise Technologies Inc.) (Insights and Enterprise)
Kaye, Gary M.
Photonics Spectra, v26, n7, p86(1)
July, 1992
ISSN: 0731-1230 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 988 LINE COUNT: 00074

... treat glaucoma and farsightedness. In the area of farsightedness, Sunrise uses a near-IR holmium **laser** to create small lesions in the **collagen** of the cornea, which **reshapes** the cornea without the kind of

tissue ablation that results from excimer **lasers** .
The third area of focus for Sunrise has been in the area of surgical lasers...

25/3,K/10 (Item 3 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

05790821 SUPPLIER NUMBER: 11881154 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Sunrise to acquire Emmetropix Corp. (Sunrise Technologies Inc.)
Kincade, Kathy
Laser Report, v28, n4, p3(1)
Feb 15, 1992
ISSN: 0023-8600 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 437 LINE COUNT: 00036

... this approach through noninvasive heating of the corneal collagen, which is said to alter the **collagen** structure and mechanical properties without damaging the corneal **tissue** .
According to Sunrise, the holmium **laser** approach will **shape** the cornea more quickly and less expensively than excimer laser systems currently being commercialized by...

25/3,K/13 (Item 3 from file: 149)
DIALOG(R)File 149:TGG Health&Wellness DB(SM)

01929247 SUPPLIER NUMBER: 64564063 (USE FORMAT 7 OR 9 FOR FULL TEXT)
SCARED FOR LIFE?(new treatments for scars)(Brief Article)
Micco, Nicci
Ladies Home Journal, 117, 8, 52
August,
2000
DOCUMENT TYPE: Brief Article PUBLICATION FORMAT: Magazine/Journal ISSN: 0023-7124 LANGUAGE: English RECORD TYPE: Fulltext TARGET AUDIENCE: Consumer
WORD COUNT: 311 LINE COUNT: 00027

... reddish tint. These lasers can also flatten a raised (hypertrophic) scar by breaking down the **collagen** in scar **tissue** . (CO.sub.2) **lasers** work by **tightening** **collagen** fibers to help elevate and normalize the appearance of indented (atrophic) scars. The number of...

25/3,K/15 (Item 1 from file: 141)
DIALOG(R)File 141:Readers Guide

03259497 H.W. WILSON RECORD NUMBER: BRGA96009497
Facing the laser.
Medich, Rob.
Esquire v. 125 (Jan. 1996) p. 32-3
LANGUAGE: English

...ABSTRACT: and, according to doctors, twice as effective as

dermabrasion. An additional benefit of the CO2 **laser** is that its **heat** appears to shorten the **collagen** bundles in the **skin** , producing an immediate **tightening** of the remaining **skin**.

25/3,K/18 (Item 3 from file: 484)
DIALOG(R)File 484:Periodical Abs Plustext

02648117 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Facing the laser
Medich, Rob
Esquire (GESQ), v125 n1, p32-33
Jan 1996
ISSN: 0194-9535 JOURNAL CODE: GESQ
DOCUMENT TYPE: Feature
LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 383 LENGTH: Short (1-9 col inches)

TEXT:
... in about six weeks.
A side benefit of this procedure, say doctors, is that the **heat** of the **laser** seems to shorten the **collagen** bundles in the **skin** , thereby producing a **tightening** of the remaining **skin** that is immediately apparent.
One more reason not to be terminated at thirty.
?